# THE ANNUAL

OF THE

# BRITISH SCHOOL AT ATHENS

## No. XXXV.

## SESSION 1934–1935

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# THE BRITISH SCHOOL AT ATHENS

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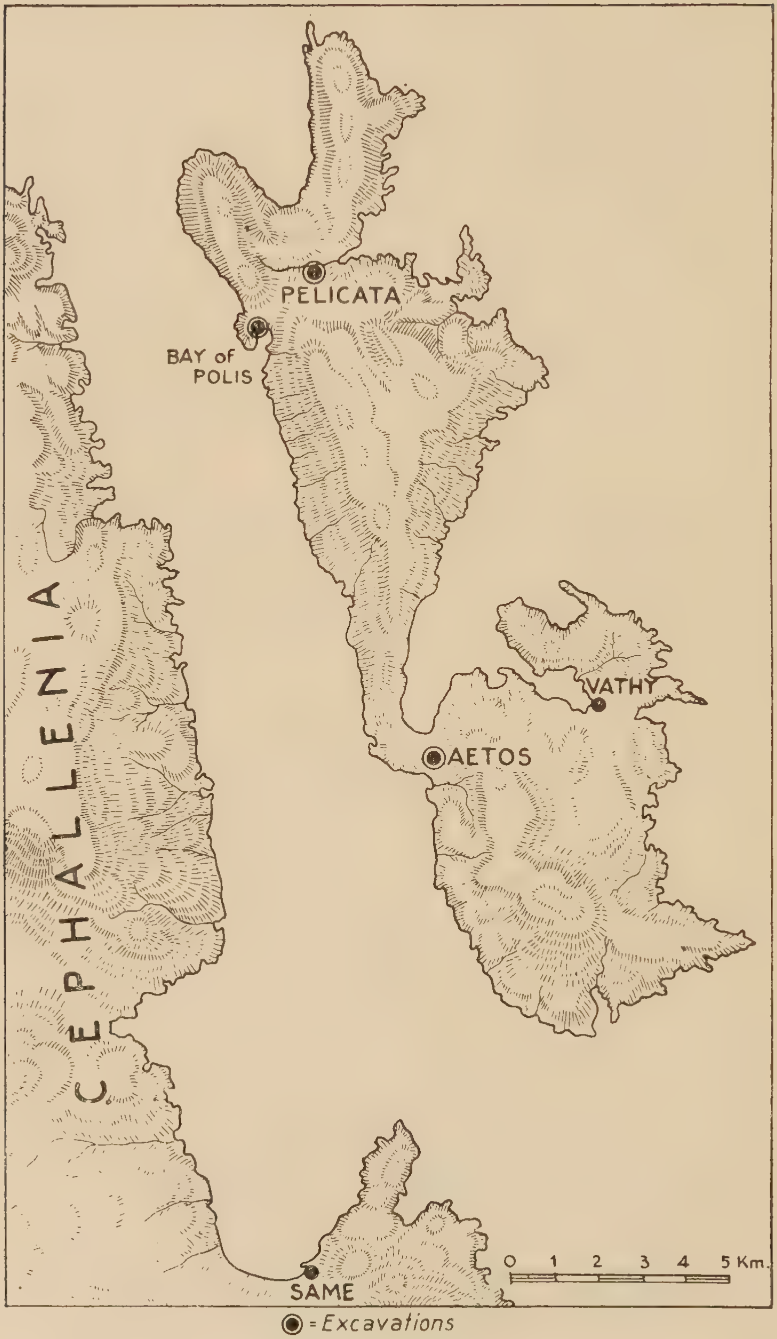
PELICATA
BAY of POLIS
CEPHALLENIA
VATHY
AETOS
SAME
0 1 2 3 4 5 Km.
◉ = Excavations

FIG. 1. ITHACA.

# EXCAVATIONS IN ITHACA, II

(Plates 1–9)

## The Early Helladic Settlement at Pelikáta

### I. The Site (Pls. 1–3, Figs. 3–11)

Pelikáta hill might best be described as a spur of Mt. Exogé, which lies immediately to the west of it; but it is also joined on the south to the central peak of the island (Mt. Anogé) by a narrow ridge on which stands the main street of Stavrós village. Elsewhere it is detached (Pl. 2), and its sides fall in irregular gradations, broken further by terraces, to Afáles bay on the north, Phríkes bay on the east and Pólis bay on the south. From the summit all three bays are visible and any one of them can be reached in a short half-hour. In addition to its command of the three bays, Pelikáta has to-day, and presumably had in the past, a supply of first-rate drinking-water, reached at a depth of a few metres below the surface; and a small level space on the actual summit. With these obvious advantages the hill must have invited occupation, and in fact seems the spot on the island[1] best adapted for a small primitive community interested in trade or piracy or both. It seemed then a suitable place to examine, especially since there were remains of an ancient circuit wall visible above ground, and since Vollgraff had found prehistoric sherds on the west slope in 1904.[2] What is more, many scholars, including Leake, had selected Pólis as being the spot which best conformed to the site of the city of Odysseus in the Homeric description of Ithaca.[3]

In the report that follows the remains of the prehistoric period only are described, most of which are on the summit of Pelikáta or close to it.[4] Later remains, Hellenic or Hellenistic, all of which were outside the circuit wall,[5] or in outlying spots, Stavrós, Asprosykiá and Hágios Athanásios, will be described in a later instalment.[6]

---

[1] Cf. p. 44.

[2] Dr. Vollgraff very kindly placed his excavation day-book at my disposal.

[3] Pelikáta becomes by implication the site of the palace. Leake, *Travels in Northern Greece* iii 44 ff.

[4] Some LH III sherds from Stavrós, Asprosykiá and Hágios Athanásios are included in the inventory.

[5] Except for a tiny fragment of a bowl-rim with red glaze, and two pieces of black-glaze ware, all from the surface earth in Area IV, and a piece of a mould from Area II.

[6] These areas are shewn in Fig. 2. Miss S. Benton was in charge at Pólis bay, Mr. C. R. Wason at Hágios Athanásios and partly at Stavrós, Mr. T. C. Skeat at Asprosykiá and also partly at Stavrós. He is also responsible for the plans and sections (Figs. 5, 7, 8,

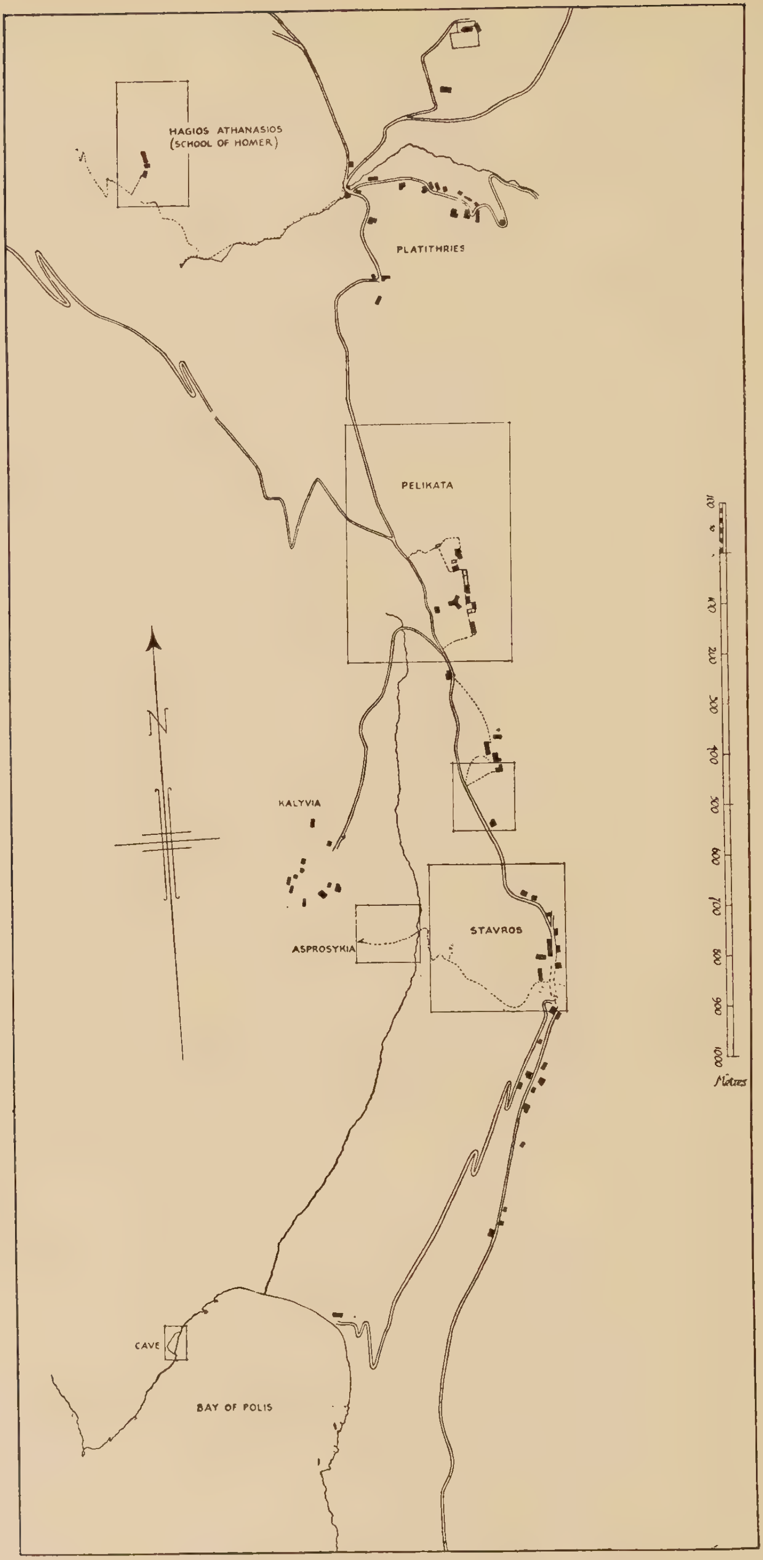
HAGIOS ATHANASIOS
(SCHOOL OF HOMER)
PLATITHRIES
PELIKATA
N
KALYVIA
ASPROSYKIA
STAVROS
CAVE
BAY OF POLIS
100
50
0
100
200
300
400
500
600
700
800
900
1000
Metres

Fig. 2.—Key Plan of Areas Explored at Pelikáta and in Neighbourhood.

Owing to various causes, earthquakes and subsidences (to both of which Ithaca is peculiarly exposed), denudation,[1] levelling and terracing, the almost complete absence of remains *in situ* is not remarkable, though rather discouraging. It is literally true that not one stone has remained upon another,[2] and very few next to another in the same course. But there are traces enough, though disconnected, to shew that structures of some kind once stood at the top of the hill, and enough pottery associated with them to enable their date to be inferred. A detailed description of the incoherent jumbles of stones which form the bulk of the remains would be tedious and unprofitable. A very brief description of the areas uncovered, supplemented by the plans and sections, will shew their character and condition well enough.

Remains above ground and visible before excavation were large roughly-worked stone blocks, which clearly formed the foundation of a circuit-wall enclosing the summit. In one place, towards the north end close to a steep fall in the ground, fifteen of these blocks are, if not in their original alignment, not far from it (Pl. 3*a*) [3]; again, on the east slope the foundation of a strip of modern terrace wall seems to consist of ancient blocks *in situ* (Pl. 3*b*) [4]; on the west side, similar blocks lie thickly scattered just below the summit in a way that suggests that they have been rolled off it (Pl. 3*d*); and in one of our trial-pits, just east of Area IV, four similar blocks were found heaped together. In the southward extension of Area I, blocks apparently *in situ* were also found.[5] From these groups the line of the wall can be inferred, except at the south end. Pottery associated with these blocks was invariably Early Helladic.

In addition to these large roughly-shaped blocks, stones mostly of smaller size and more carefully worked lie round the modern house that

---

9, 11). All of these assisted me from time to time at Pelikáta. The excavation of Pelikáta and Polis was made in the summer of 1930 and 1931; of Pólis in 1932 as well. Mr. T. Emmett made the general plan (Fig. 2) and the detailed plan of Pelikáta (Pl. 1). The drawings of sherds, etc. were made by Miss A. Richmond.

[1] Cf. Fig. 3*a*; an outcrop of rock in the top of which is hewn an oblong tomb; originally, it may be presumed, below the level of the soil, the tomb is now, owing to denudation, about 2 metres above it. Cf. Partsch., *Kephallenia u. Ithaka*, p. 60.

[2] Except possibly the piece of wall mentioned below (note 4).

[3] Seen by Leake: 'Just beyond, are the foundations of a large Hellenic wall in the vineyards. The situation is called Σαμικοῦ. . . . The ancient walls at Samikú crossed the northern end of a long height, which terminates to the south at Stavró, where are a few houses, just above the head of the harbour called Pólis.' (*Travels in Northern Greece* iii 44.)

[4] Cf. p. 12. These blocks belonged perhaps to a bastion rather than to the wall itself, the line of which seems to have run nearer the summit. The original line at this point is perhaps represented by a stretch of terrace wall between this line of blocks and the summit; if it is the original wall, three courses are preserved in places (Pl. 3*c*).

[5] Cf. p. 8.

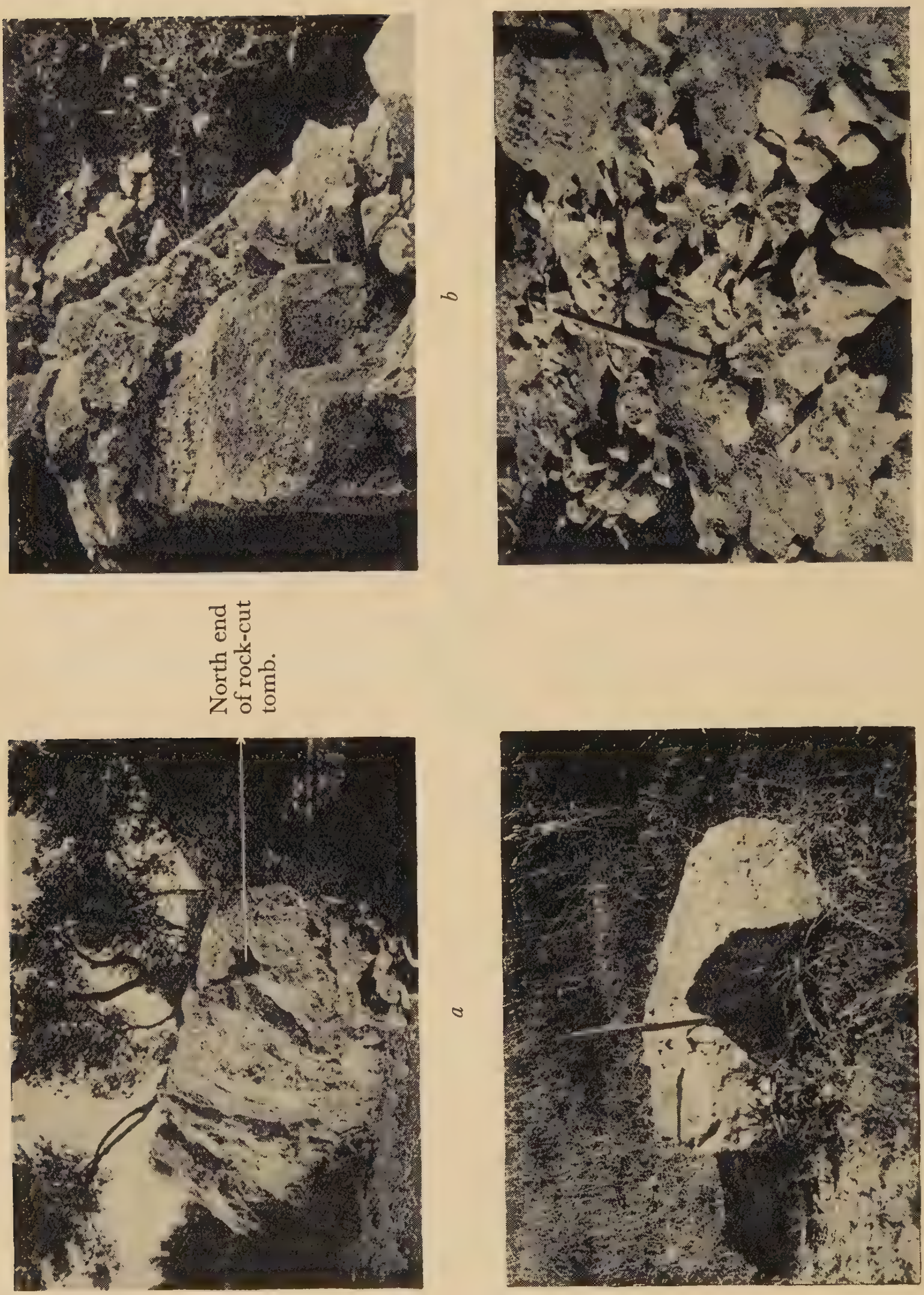
b
d
North end of rock-cut tomb.
a
c

Fig. 3.—*a*, Rock-cut Tomb; *b* and *c*, ‘Crutched’ Stones; *d*, Area I.

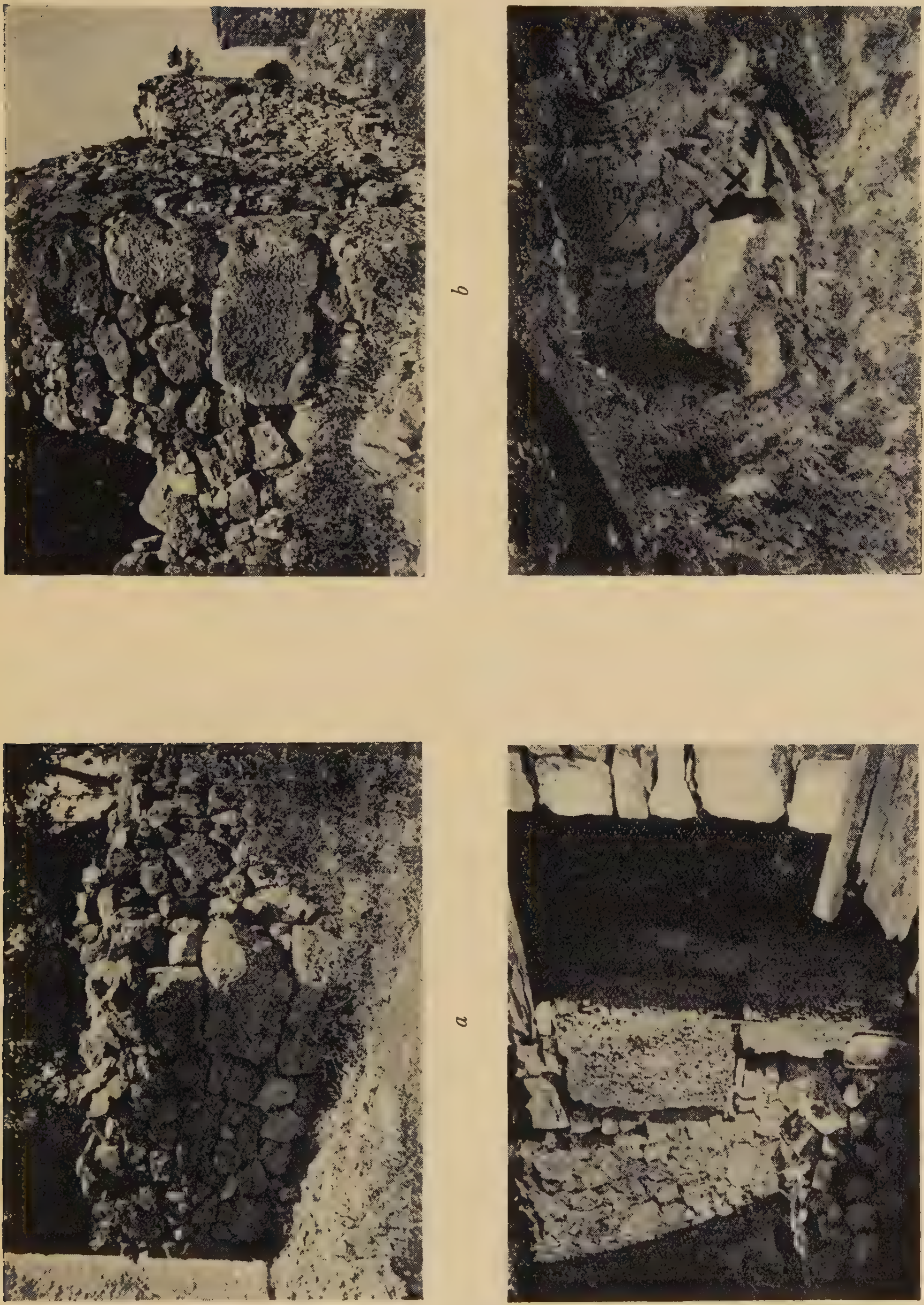

Fig. 4.—*a*, *b* and *c*, Ancient Stones Incorporated in Modern Buildings or Walls; *d*, Area VI, Pithos Burial; X = Figurine.

occupies the highest point of the hill; others are incorporated in adjacent terrace-walls. One of these stones in particular deserves notice. It lies just east of the modern house; it is *ca.* 1·7 m. long (one end is broken and it is cracked in the middle) *ca.* ·4 m. wide and ‘ crutched ’ at the unbroken end (Fig. 3*b*). There are other ‘ crutched ’ stones hereabouts; one is among the foundation course *in situ* in Area V (Pl. 3*b*), one can be seen in Pl. 3*c* and another is lying near the north end of the plateau that forms the summit (Fig. 3*c*). ‘ Crutching ’ is known in Mycenaean masonry, but is more characteristic of Greek masonry, or might, of course, be used by local masons at any period on their own account. In the absence of other evidence, such as Hellenic or Hellenistic sherds, there does not seem to be any serious objection to assigning these stones to the prehistoric building of which debris including LH III pottery was found in Area II, just south of the modern house. On the other hand, they may belong to some later wall or building, in spite of the absence of appropriate sherds.[1]

The remains in Areas I–VI (Pl. 1) were revealed by excavation. They have this much in common, that they consist of jumbled stones, with which were mixed Early Helladic pottery and domestic objects; but in two of them a small proportion of ‘ Minyan ’ and in one of LH III as well was found.

### *Area I* (Figs. 3*d*, 5).

The eastern half is more or less level; in its north-western corner is a layer of scattered stones lying on virgin soil (Fig. 3*d*), probably remains of collapsed houses, since domestic objects, including a pivot-stone (191), were found among them. In the same half were also remains of pithos-burials, presumably intra-mural. They were much disintegrated, but at points (Fig. 5, nos. 6, 7) large pieces of the enclosing pithos, around which were scattered either pieces of human skull-bones and teeth, or a few simple *beigaben*, indicate the character of the burials. Their exact number could not be ascertained, but there were at least three. Human bones were all very fragmentary, which implies that only bones, and not the complete skeleton, were placed in the pithoi. Animal bones and teeth were also found.[2]

Near the centre of this half was an irregularly-shaped pit or bothros, one metre deep; the lower part was filled with fragments of pithos and vases (two subsequently restored, nos. 15, 29), bones and two bits of skull. This lower part had at some time been sealed with a layer of stones forming a kind of floor, which was enclosed with pithos fragments placed on end, and with stones. On this floor lay more vase-fragments, including those of vase 30, a boar's tusk and a flint blade. Pieces of charred wood lay above the floor and adhered to the pithos fragments, one of which (the base) was blackened by fire. The rest of the bothros was filled up to the level of the surrounding ground with casual stones. Since the bones were not human[1] the impression created by these remains is that we have to do with a *bothros*[2] which was later turned into a hearth.

---

[1] Other stones presumably from this building, now incorporated in modern buildings on the summit, are shewn in Fig. 4*a*, *b*, *c*.

[2] I wish to thank Professor Koúmares, who very kindly examined the bones, etc.

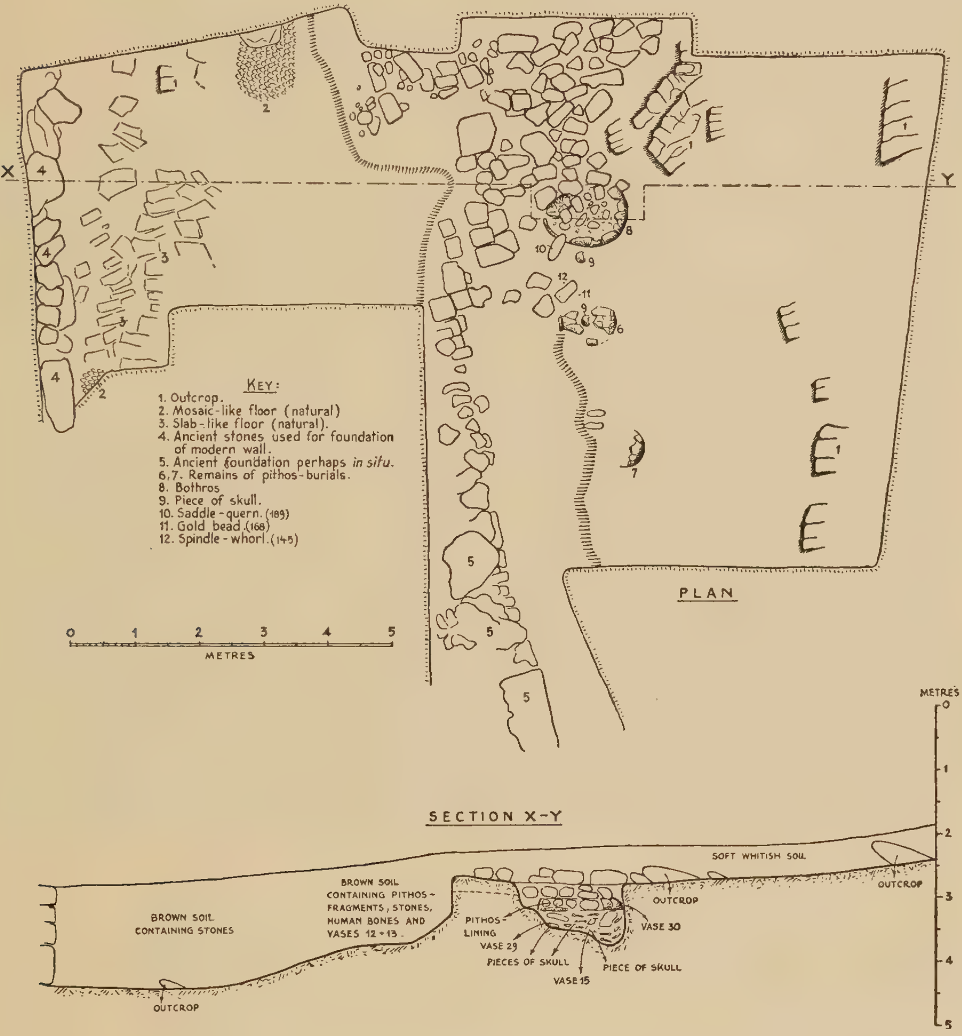
X
Y
E
1
2
3
4
5
6
7
8
9
10
11
12
KEY:
1. Outcrop.
2. Mosaic-like floor (natural)
3. Slab-like floor (natural).
4. Ancient stones used for foundation of modern wall.
5. Ancient foundation perhaps *in situ*.
6,7. Remains of pithos-burials.
8. Bothros
9. Piece of skull.
10. Saddle-quern. (189)
11. Gold bead. (168)
12. Spindle-whorl. (145)
0 1 2 3 4 5
METRES
PLAN
SECTION X-Y
METRES
0
1
2
3
4
5
SOFT WHITISH SOIL
OUTCROP
BROWN SOIL CONTAINING STONES
BROWN SOIL CONTAINING PITHOS-FRAGMENTS, STONES, HUMAN BONES AND VASES 12 + 13.
PITHOS-LINING
VASE 29
PIECES OF SKULL
VASE 15
PIECE OF SKULL
VASE 30
OUTCROP
OUTCROP

Fig. 5.—Area I, Plan and Section.

---

[1] I cannot explain the presence of the pieces of skull.

[2] On *bothroi* cf. R. W. Hutchinson, *J.H.S.* LV. 1 ff.

The western half of this area was composed almost entirely of earth filling, which contained stones, pithos-fragments, vases 12 and 13 and fragments of other vases, human and animal bones, teeth, etc., clearly remains of pithos-burials displaced from the eastern half. The sharp fall in the ground which separates the eastern from the western half seems to coincide partially with the line of the ancient circuit-wall, to judge from some larger blocks in line (Fig. 5, 5) which appeared when the area was extended southwards. If this is so, the houses containing the burials must have been built up against the inner face of the wall.

Virgin soil at the bottom of the western half consisted of the usual stiff white substance, but towards the west end a slab-like formation (Fig. 5, no. 3), and in two places (Fig. 5, no. 2) mosaic-like formations appeared, which, at first sight, seemed to be artificial. Similar phenomena, however, appeared elsewhere in our trial-pits, and there is no doubt that they are natural.

The following vases and objects come from this area:—

*Vases or fragments:* 11*a*, *b*, 12–16, 18, 26–31, 37, 40–42, 46, 47, 80, 81, 98, 99.
*Objects:* 145, 146, 150*a*, *b*, 155–158, 165–168, 170, 171, 174–176, 178, 180, 186, 187, 189, 191.

### *Area II.*

This was cleared to its limits except on the north-west, where it is bounded by a modern terrace wall following contour line 150. Small thinly-scattered stones almost like a paving, lie on virgin soil between slabs of outcrop. Except at the east edge, where a line of laid stones, a metre in length and ·20 m. wide may be part of the foundation of a house, none of the stones are in any order or alignment. Among the stones only EH sherds.[1]

### *Area III.*

This consisted of a confused mass of stones, swept perhaps from the higher level to form a filling for a modern terrace. As in area II, sherds were all EH. The large stemmed bowl (No. 19) comes from here.

### *Area IV* (Figs. 6–8*a*).

Cleared to its limits on the north: on the east and south sides it is bounded by modern walls, and on the west by the threshing floor, which was built partly over it on this side. The surface earth (*ca.* ·5 m. thick) contained hundreds of EH sherds, 32 ‘Minyan’ sherds, domestic objects and bits of clay bearing the impress of reeds. Below this, the whole area was covered with rather small stones, which, as in Area II, give the appearance of a paving (Fig. 6). At the edges they rest on virgin soil, but a trench opened down the centre from east to west exposed a central depression with an average depth of 2 m. This was completely filled with unworked stones, EH sherds and objects similar to those found in the surface earth. In addition to the EH sherds, of which there was an enormous quantity, 36 ' Minyan ' sherds were found below a thin band of fine soil which separated the fill into an upper and a lower half (Fig. 8*a*). The appearance of a paving which the area presented when the surface earth was removed is fortuitous, and there is little doubt that the stones are from the rubble walls of houses which stood on the levelled space above (the threshing floor and the ground immediately to the south of it) and which were shovelled downhill to fill up the depression.

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[1] Including No. 70.

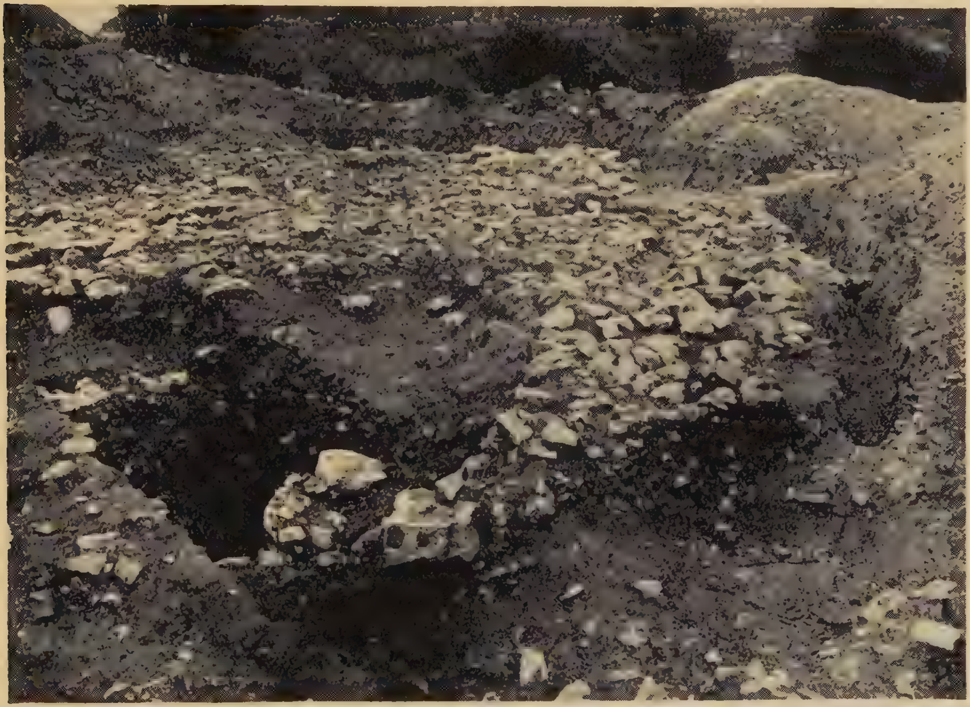


Fig. 6.—Area IV, Top of Fill, from West.

Vases and objects from this area are:—

*Vases or fragments :* 9, 39, 53–55, 59–62, 71, 73, 74, 78, 87, 90, 96, 97, 102–105, 107, 109, 112.
*Objects :* 138–144, 147, 148, 152, 154, 181, 183, 188, 190.

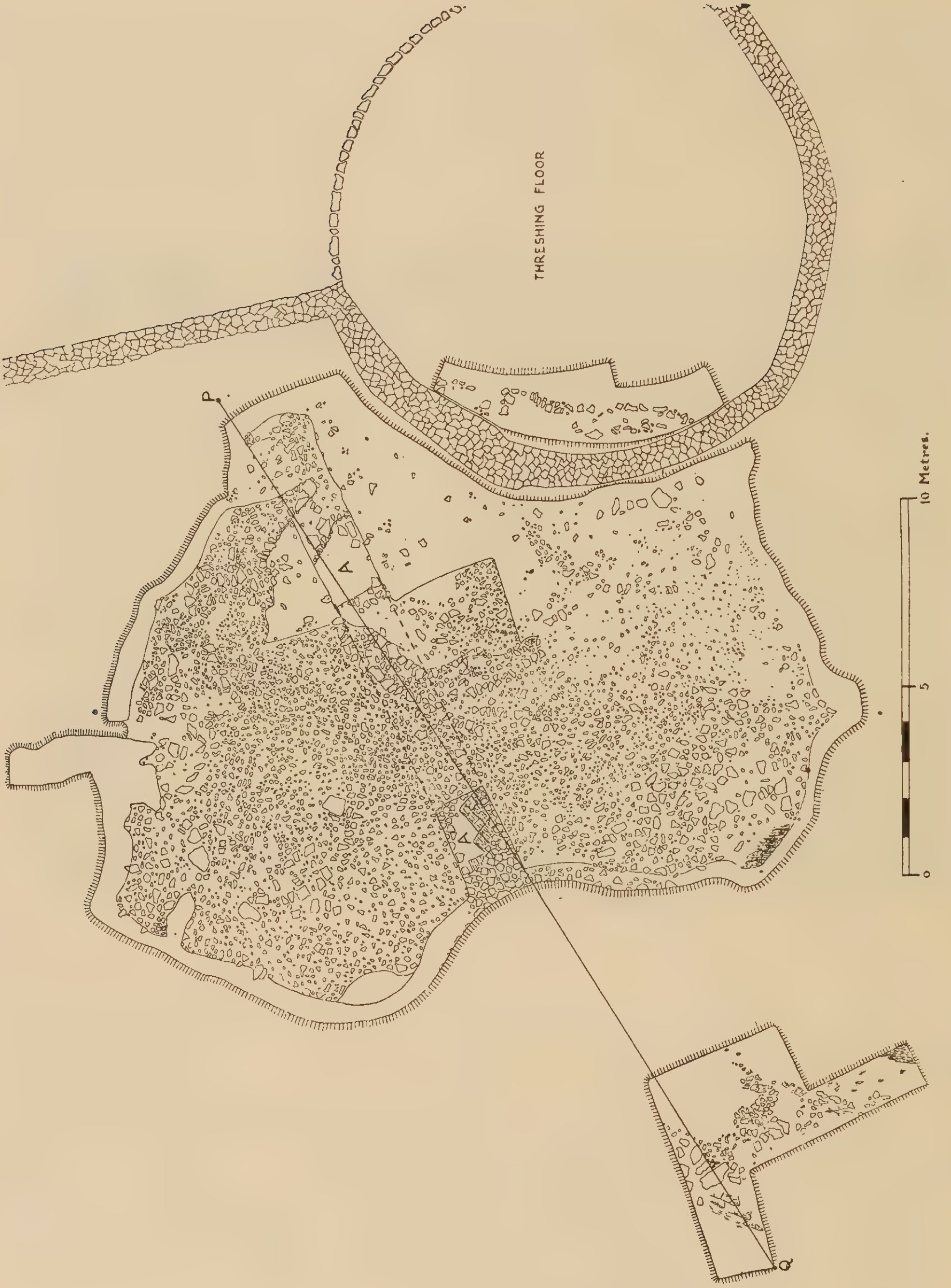
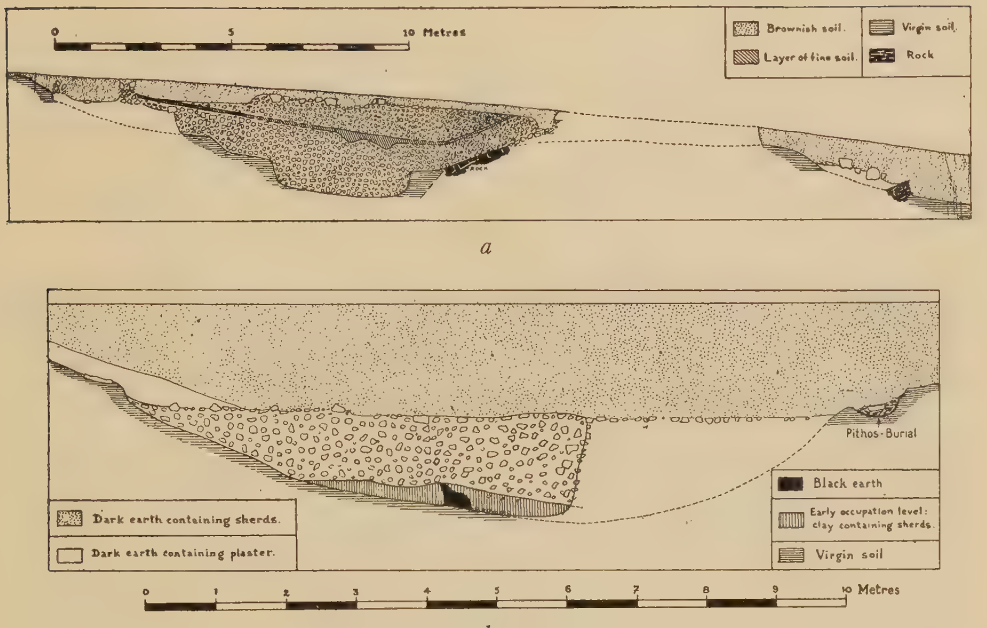

THRESHING FLOOR
P
Q
A
A
A
0
5
10 Metres.

FIG. 7.—AREA IV. A = PITS DUG TO VIRGIN SOIL 1930. - - - - - = EXTENSION OF PITS 1931.


0 5 10 Metres
Brownish soil.
Virgin soil.
Layer of fine soil.
Rock
ROCK
Pithos-Burial
Black earth
Early occupation level: clay containing sherds.
Virgin soil
Dark earth containing sherds.
Dark earth containing plaster.
0 1 2 3 4 5 6 7 8 9 10 Metres

*a*

*b*

FIG. 8.—SECTIONS: *a*, AREA IV, P–Q; *b*, AREA VI, P–Q.

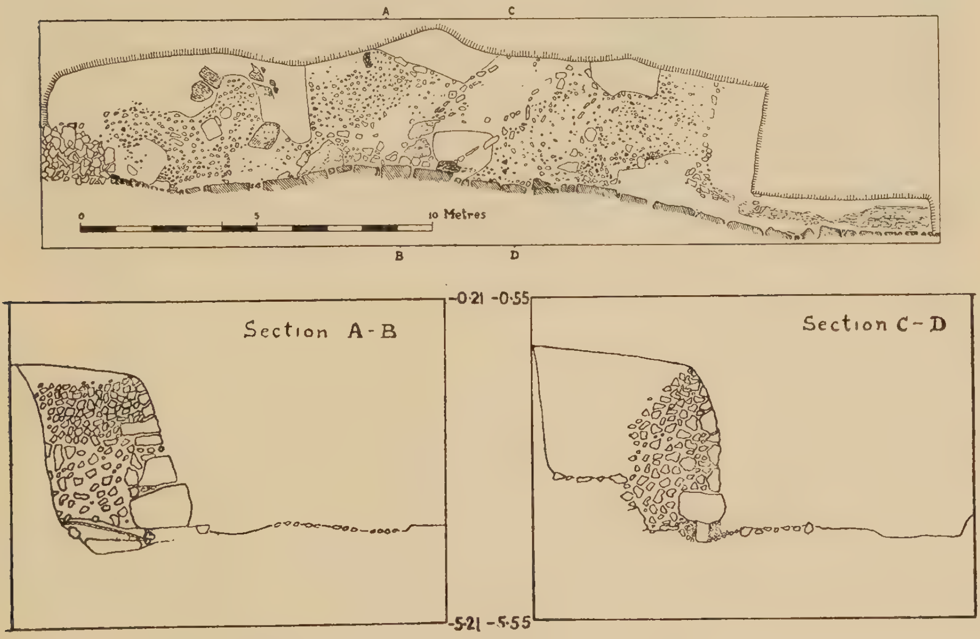

A
C
0 5 10 Metres
B
D
-0·21 -0·55
Section A-B
Section C-D
-5·21 -5·55

FIG. 9.—PLAN AND SECTION OF AREA V.

*Area V* (Pl. 3*b*, Fig. 9).

The line of ancient blocks apparently *in situ* has already been mentioned.[1] Some of these rest on the rock itself, some partly on the rock and partly on a packing of small stones, and one on a narrow slab with a packing of small stones on either side (Fig. 9*b*, Section C–D). Alongside the wall to the east and directly on the rock was a layer of smallish stones, which with the slab-like pieces of outcrop, formed a rough paving. This paving had an average width of 5 m. and could be followed for a length of about 20 m. It was covered with a layer of soil on an average 50 cm. thick. In this soil and in the interstices of the small stones lay a large quantity of EH sherds and, with the exception of a few modern, none later. Tests made below and behind the blocks of the wall and in the stone packing also produced nothing but EH sherds and the inference is that wall and paving are contemporary. The paving in fact seems to be part of a road, which, skirting a bastion,[2] led to the summit, but its continuation north and south was not discovered.

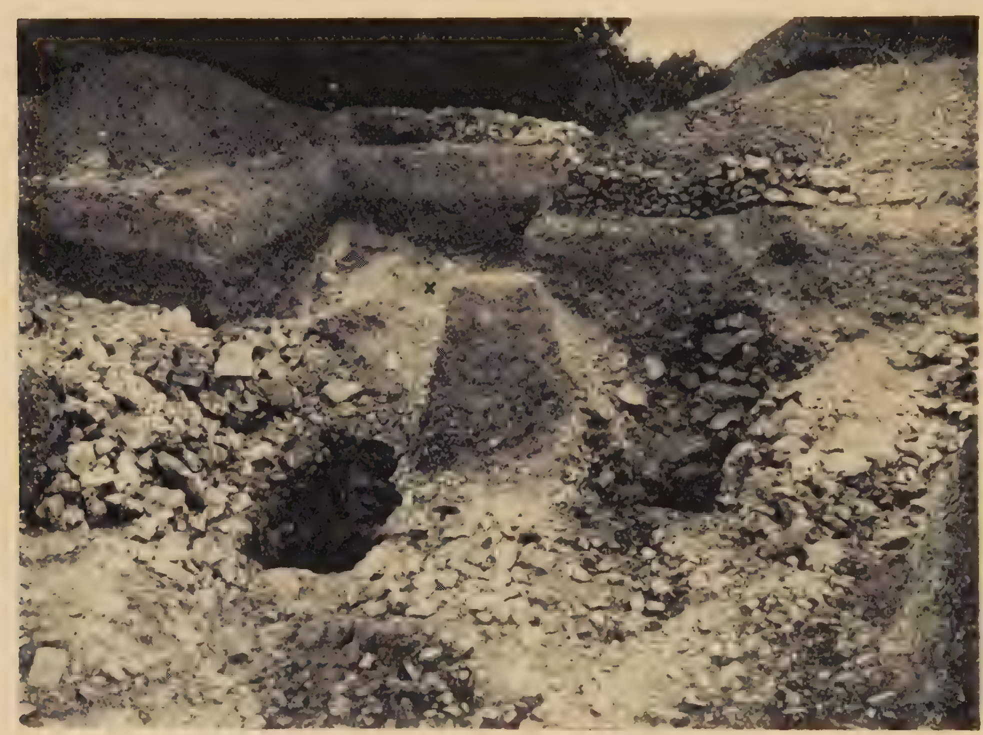


FIG. 10.—AREA VI. TOP OF RUBBLE LAYER, FROM WEST; X = PITHOS BURIAL.

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[1] Cf. p. 3.

[2] Cf. p. 3 and note 4.

From this area come the following:—

*Vase-fragments:* 24, 25, 94.

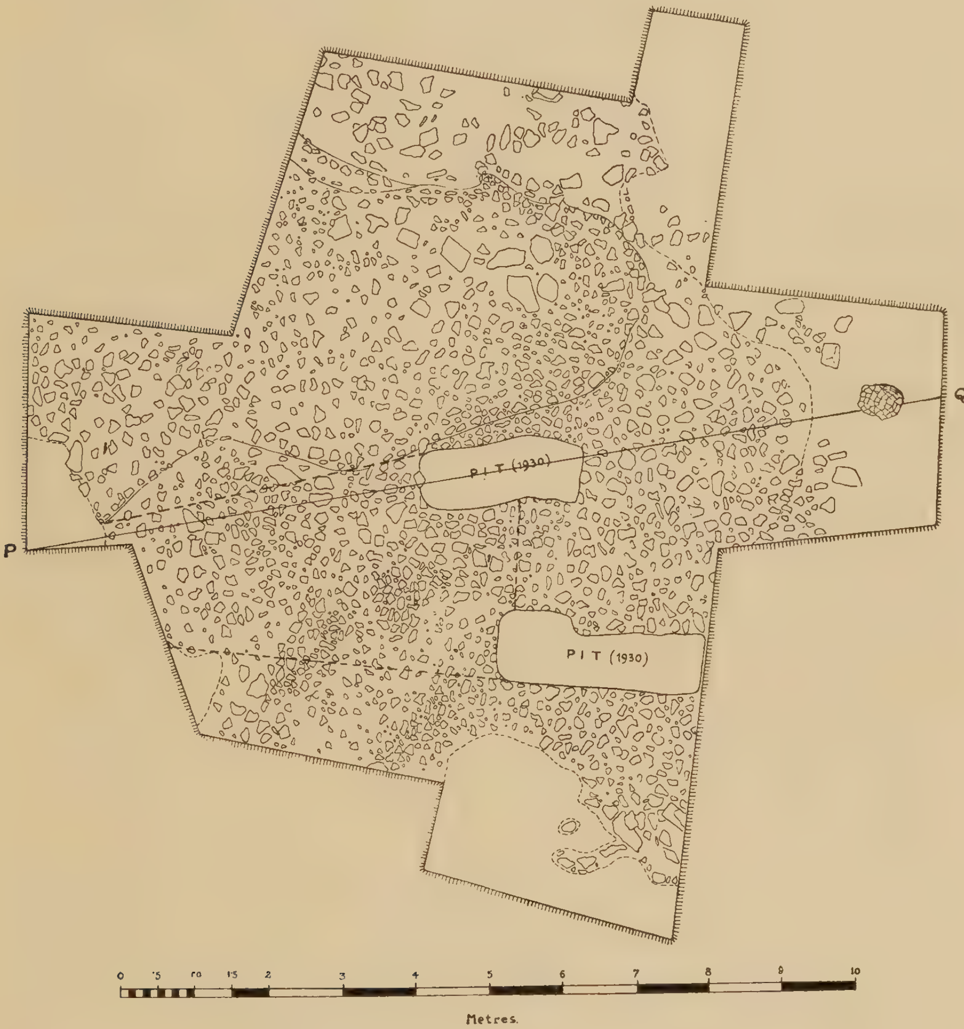

FIG. 11.—AREA VI. PLAN AT TOP OF RUBBLE LAYER. - - - - - - EXTENSION 1931. For section cf. Fig. 8*b*.

*Area VI* (Figs. 8*b*, 10, 11).

Rather like Area IV; bounded by modern walls which rest partly on fill. Excavation shewed that the ground falls fairly steeply from the summit *ca.* 3 m. and rises again on the south *ca.* 1·50 m., so that a depression is formed. This depression was explored to virgin soil by means of two pits in 1930. These were extended in 1931, as indicated on the plan (Fig. 11). At the bottom of this depression was a layer of moist clay, on an average 50 cm. thick, in which lay about 100 smallish stones resting on virgin soil. Their position was not haphazard, since a definite edge could be detected about ·4 m. from the north side of the pit, with a return at not quite a right angle, ·5 m. east of a heap of black carbonized earth. A large isolated block lay 1·1 m. south-east from the north edge of the pit. There is no doubt that this layer is not fill, and the remains, except for the large fallen block, are *in situ*. The clay must then be the remains of mud-brick walls. The sherds found in it, unlike those from the rest of the site, had retained a bright lustrous glaze, several patterned sherds (65–68) were found in it, and almost all the grey-polished ware (82–86, 89); also three domestic objects,[1] five pieces of clay with impress of reeds, six flint-chips, eight shells, and a group of twelve water-worn pebbles.[2]

Above this layer was a mass of rubble as in Area IV, about 1 m. thick, containing a great quantity of EH sherds in the bad condition normal throughout the site. Above this again was a fill of brown earth, containing few stones, but masses of EH sherds, 20 ‘ Minyan ’ and 60 LH III fragments, 39 of which are from kylikes or krateriskoi.

At the eastern edge of the depression (*ca.* 1·5 m. below the summit, cf. Fig. 8*b*), and on virgin soil lay half of a large pithos, on which were a few broken bones,[3] teeth and fragments of a skull, a figurine of a bull and two vases (17, 43). A stone had fallen into the middle.

The following came from this area:—

*Vases or fragments :* 1–8, 10, 17, 20–23, 32–36, 38, 43–45, 48–52, 56–58, 63–69, 72, 75–77, 79, 82–86, 88, 89, 91–93*b*, 95, 100, 106, 108, 110, 113–118, 120–125, 127, 128, 130–137.
*Objects :* 149, 151, 159, 161–164, 169, 177, 179.

*Outside Areas I–VI* (Pl. 1).

In the numerous trial-pits sunk within the line of the circuit-wall and in many outside it, only EH sherds were found; these were especially numerous in the pits in the vineyard immediately south-west of the highest point. Only in pits outside the apparent line of the wall were later sherds found, and the Hellenic or Hellenistic burials all lay outside it.

The following come from Pelikáta but not from Areas I–VI:—

*Vases or fragments :* 101, 111.
*Objects :* 153, 160, 172, 173, 182, 184, 185.

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[1] Part of a bone tool (no. 161) a bone needle (no. 159) and a spindle-whorl.

[2] Probably for heating water; such stones are known from primitive settlements elsewhere.

[3] Miss D. Bate, who kindly examined one of the bones, reports that it is that of a pig.

From outlying spots come:—

*Vase fragments*: 119*a*, *b* (Stavrós), 119*c* (Asprosykiá), 119*d* (Hágios Athanásios), 126*a* (Asprosykiá), 126*b* (Hágios Athanásios), 129 (Asprosykiá).

## II. Inventory of Selected Pottery and Objects

### *Early Helladic Pottery: Finer Ware.*

The EH pottery from Pelikáta conforms closely to the EH of the mainland. In recording the presence of pottery in what I take to be the earliest level, *i.e.* the clay layer in Area VI,[1] I mentioned that it had retained intact the original glaze-paint. Technically this group corresponds precisely to Blegen's class B II ' completely coated ' at Zygouriés, and to the finer kind.[2] The colours are black, brown, red and intermediate tones. There are also some pieces (saucers) in the ' partially-coated ' technique,[3] and some in the thin-glaze or smear technique, *i.e.* that in which the brush-marks are visible.[4] A plain vase (43) from the pithos-burial in this area has an almost white biscuit and a smooth slip of the same colour.[5]

The pottery from the rest of the site is also EH, but unfortunately is in such a bad condition that it is not possible to decide how much of it belongs to the better and how much to the poorer and later class of glaze-painted ware. Enough traces of the glaze-paint have been preserved to shew that many vases were completely coated, but in the case of others it is impossible to say whether they were painted at all.

Few vases in the slipped and polished technique (Blegen's class A II) [6] could be discriminated, but there are at least two pieces (one the fragment of a sauce-boat) on which traces of the fine silvery slip remain.[7]

As far as forms go, the glaze-painted and plain ware of Pelikáta and the mainland correspond closely. Sauce-boats, saucers, bowls, basins, jars with perforated ledge-lugs or ledge-handles, tankards, askoi, askoid-shaped vases, pyxides, cupped bases, rope-handles, flanged strap-handles, are common to both; stemmed bowls are rare among EH forms, but Zygouriés supplies parallels [8]; on the mainland, handles of tankards start not from the rim but from the shoulder; deep bowls like no. 29 have at present, as far as I know, no EH parallels.

---

[1] Cf. p. 13.
[2] Cf. Blegen, *Zygouries* 87 ff. At Pelikáta the glaze-paint has cracked but not flaked.
[3] Blegen's Class B I; *Zygouries* 83 ff.
[4] Cf. *Zygouries* 87.
[5] Cf. p. 40.
[6] Cf. *Zygouries* 77.
[7] Cf. *Zygouries* 78 ff.
[8] Cf. *Zygouries* Figs. 108, 117; Cf. also Dörpfeld, *Alt-Ithaka*. Band II, Beil. 64, 8; 65, 4.

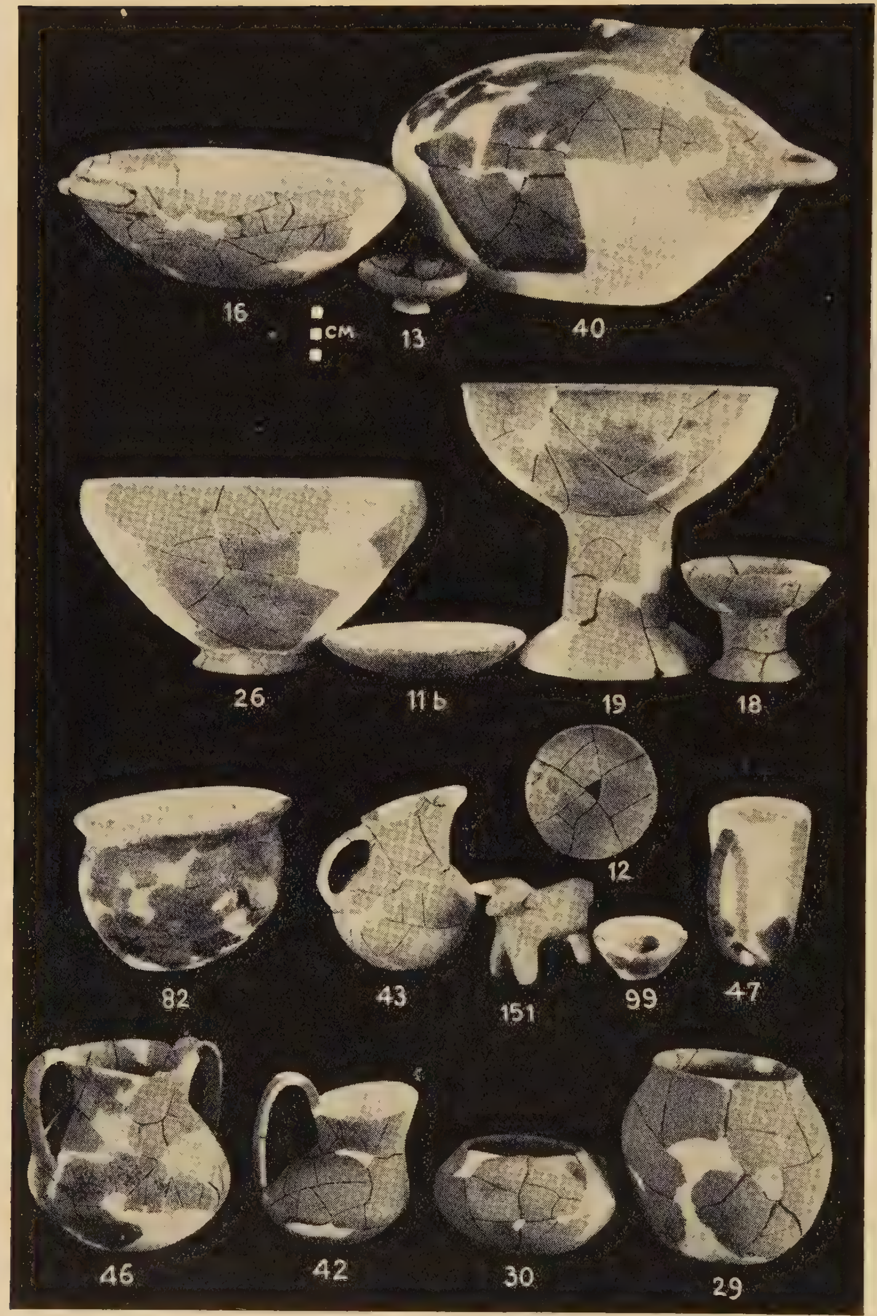
16
CM
13
40
26
11 b
19
18
12
82
43
151
99
47
46
42
30
29

Fig. 12.—Group of Early Helladic Vases, etc.

*Shallow bowls or saucers.*[1]

1 (Fig. 13). Unpainted, light buff clay. *VIa.*

2 (Fig. 13). Unpainted, light buff clay. *VIa.*

3 (Fig. 13). Light buff clay; band of thin streaky glaze-paint on rim, outside. *VIa.*

4 (Fig. 13). Similar to last. *VIa.*

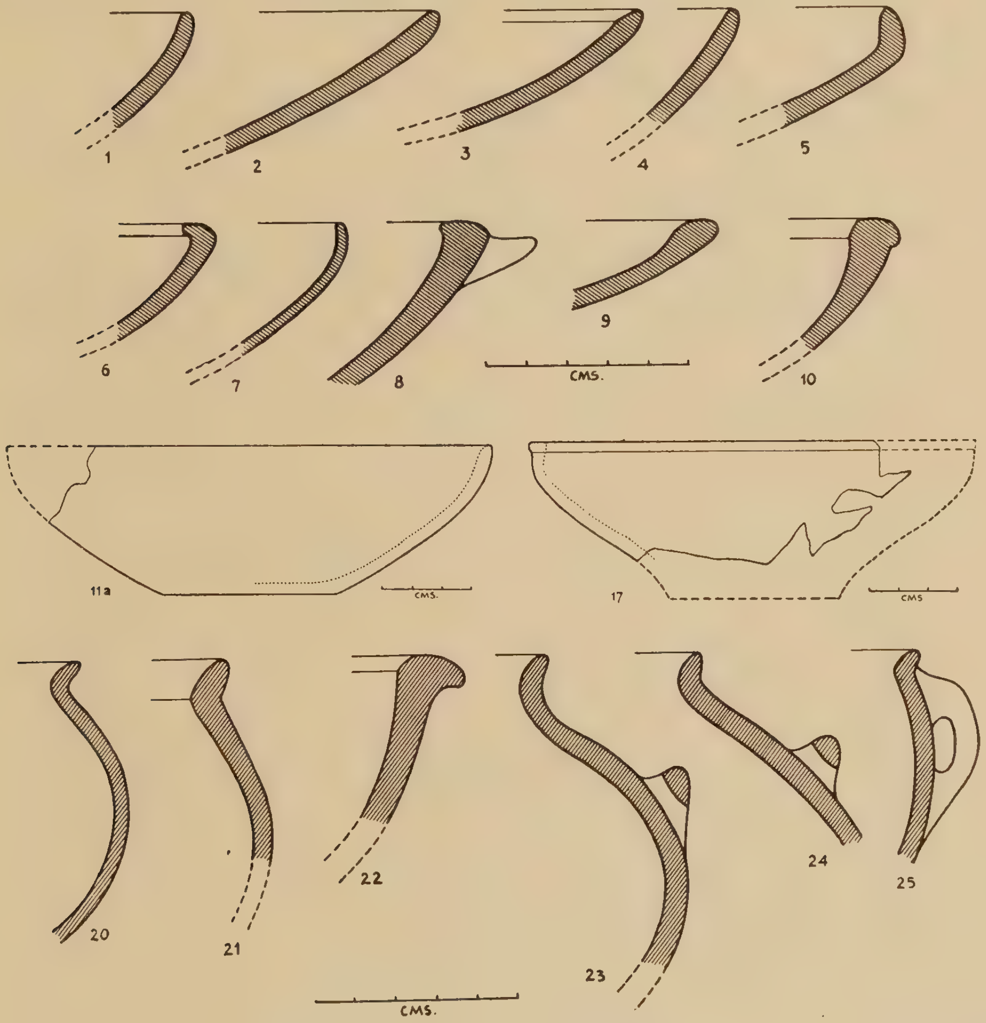

Fig. 13.—Sections of EH Bowls.

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[1] Roman numerals indicate the Areas I–VI; VI*a* the clay layer (cf. p. 14), VI*b* the rubble layer, VI*c* the upper layer. Finds on Pelikáta outside these areas are denoted *NA* (= not Areas); finds from outlying areas by the names of those areas.

5 (Fig. 13). Completely covered with glaze-paint, reddish brown (mottled) on outside, dark brown inside. *VIa.*

6 (Fig. 13). Completely covered with brownish glaze-paint, inside and outside. *VIa.*

7 (Fig. 13). Unpainted, pale greenish-white clay. *VIb.*

8 (Fig. 13). Knob at rim, coated with reddish glaze-paint. *VIc.*

9 (Fig. 13). Traces of glaze-paint, inside and outside. *IV.*

10 (Fig. 13). Completely covered with glaze-paint, red outside, brown inside. *VIa.*

11*a* (Fig. 13). Unpainted buff clay. *I.*

11*b* (Fig. 12). Buff to red clay; traces of red glaze-paint. *I.*

12 (Pl. 4). Coated with dark red glaze-paint inside and outside. *I.*

13 (Pl. 4). Low hollow foot; buff clay, coated all over with reddish glaze-paint. *I.*

14 (Pl. 4). Red clay, with traces of reddish glaze-paint. *I.*

15 (Pl. 4). Miniature saucer; buff clay, unpainted. *I.*

16 (Pl. 4). Traces of complete coat of reddish-brown glaze-paint. *I.*

17 (Fig. 13). Greenish-white clay (Corinthian?), with traces of reddish glaze-paint inside and outside. *VIa, Pithos-burial.*

18 (Pl. 4). Bowl on hollow stem; traces of complete coat of dark-red glaze-paint. *I.*

19 (Pl. 4). Large bowl on hollow stem; pair of small knobs below rim; traces of complete coat of glaze-paint, reddish on the outside, brown on the inside. Ht. 28 m. *III.*

*Deeper bowls.*

20 (Fig. 13). Pale-brown glaze-paint inside and outside. *VIa.*

21 (Fig. 13). Completely coated with warm red glaze-paint. *VIa.*

22 (Fig. 13). Completely coated with black glaze-paint inside and outside. *VIa.*

23 (Fig. 13). Ledge-lug on body with two vertical perforations; unpainted. *VIb.*

24 (Fig. 13). Pointed lug with single vertical perforation; traces of glaze-paint. *V.*

25 (Fig. 13). Narrow strap-handle; traces of glaze-paint. Diam. ·10 m. *V.*

26 (Pl. 5). Ring-base; traces of glaze-paint on the outside. *I.*

27 (Pl. 5). Slightly offset rim; red clay, originally coated inside and outside with reddish-brown glaze-paint. *I.*

28 (Pl. 5). Buff clay, traces of brown glaze-paint on the outside. *I.*

29 (Pl. 5). Two pairs of knobs on the shoulder; a small perforation near the base is just visible in the illustration. *I.*

30 (Pl. 5). On one side a pair of lugs pierced horizontally; traces of glaze-paint inside and outside. *I.*

31 (Pl. 5). Low hollow base; buff clay, unpainted. *I.*

'*Sauce-boats.*'

32 (Fig. 14). Part of spout; completely coated with dark grey glaze-paint. *VIa.*

33 (Fig. 14). Part of rim and root of oblique strap-handle; completely coated with dark brown glaze-paint. *VIa.*

34 (Fig. 14). Handle and part of rim; light buff clay, unpainted. *VIa.*

35 (Fig. 14). Handle and part of rim; coated with reddish-brown glaze-paint. *VIa.*

36 (Fig. 14). Part of spout of large vase; coated outside with dark grey, and inside with streaky brown glaze-paint. Heavy ware but with well-finished surface. *VIa.*

37 (Pl. 6). Foot and handle do not join, but probably belong; buff clay, unpainted. *I.*

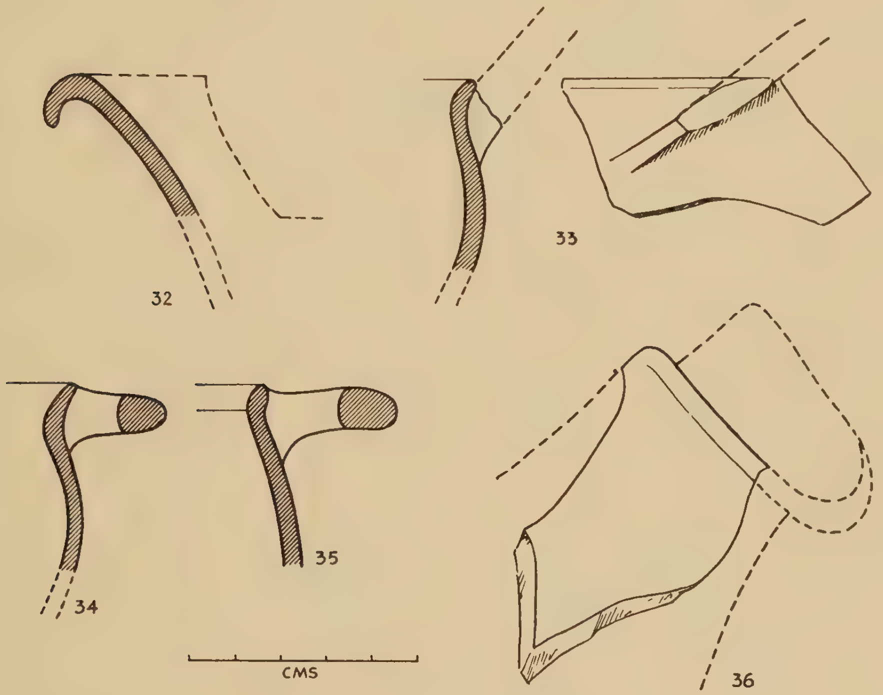


Fig. 14.—EH Sauceboats.

*Jugs, Jars, etc.*

38 (Fig. 15). Jug with sloping neck; outside coated with brown streaky glaze-paint. *VIa.*

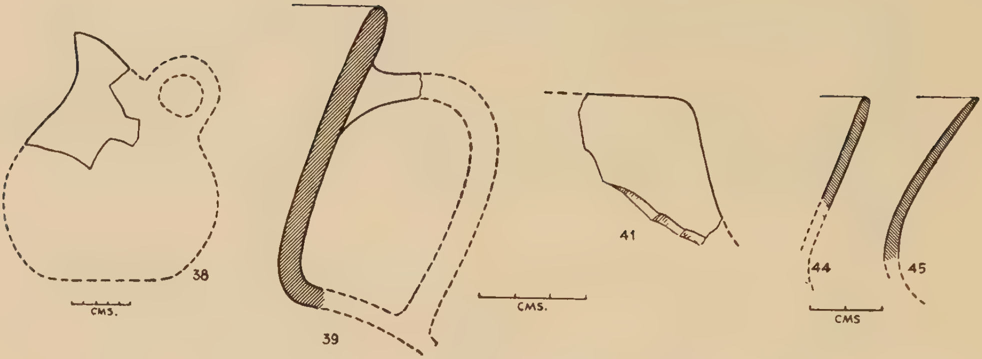
39 (Fig. 15). Neck of large jug, with wide strap-handle; greenish-white clay coated with brown glaze-paint. *IV.*

40 (Pl. 6). Pitcher with sloping neck, and two ledge-handles; buff clay with traces of coat of dark glaze-paint. *I.*

41 (Fig. 15). Fragment of jug with cut-away neck; grey clay with traces of coat of dark glaze-paint. *I.*

42 (Pl. 6). Askoid jug; buff clay, originally coated with dark glaze-paint. *I.*

43 (Pl. 6). Jug with sloping neck; greenish-white clay (Corinthian?) unpainted. *VIa, Pithos-burial.*


38
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39
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41
44
45
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Fig. 15.—EH Jugs and Tankards.

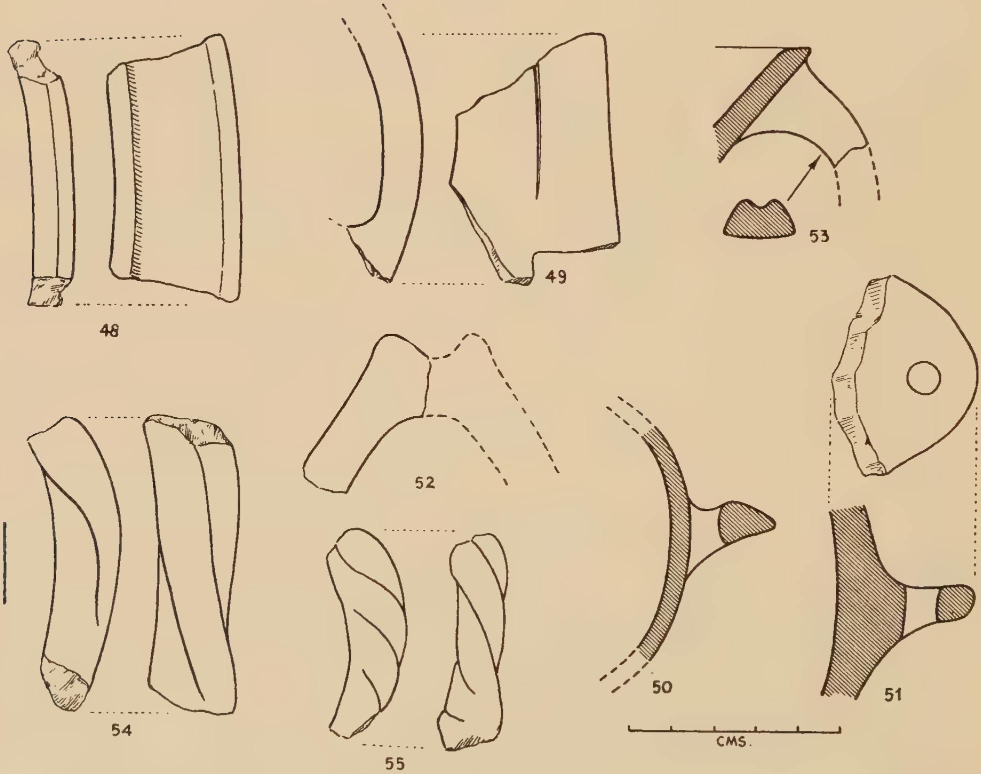
48
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Fig. 16.—EH Handles.

*Tankards.*

44 (Fig. 15).[1] Part of neck, with trace of handle springing from the rim; coated inside and outside with brownish glaze-paint. *VIa.*

45 (Fig. 15).[1] Similar to last, but no traces of handle, and the glaze-paint is black. *VIa.*

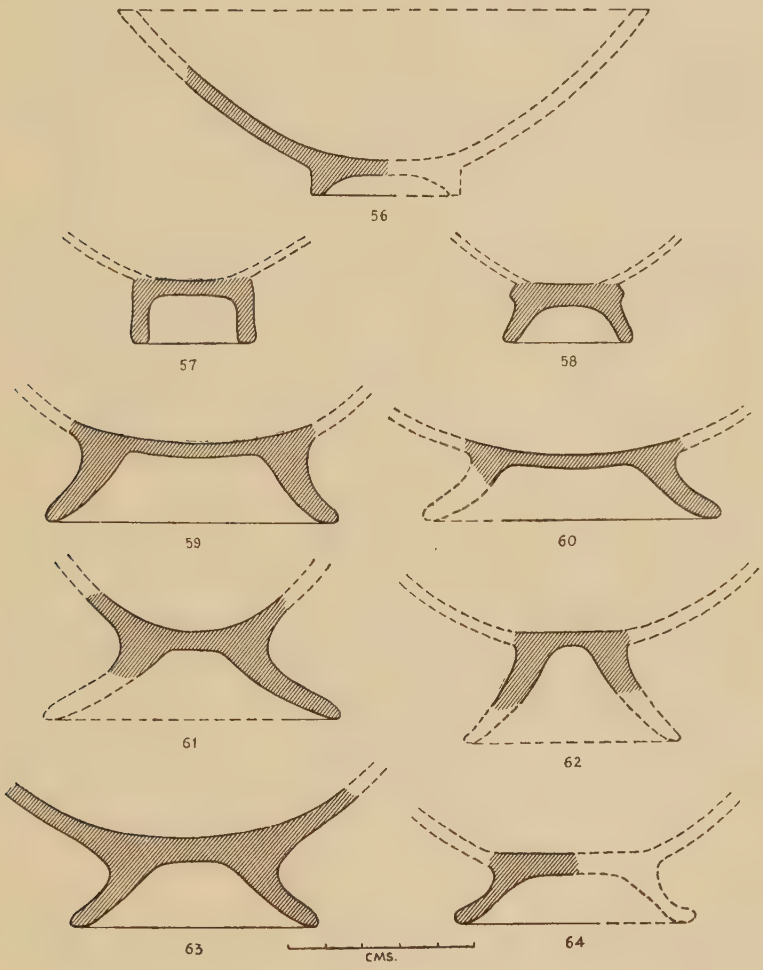

Fig. 17.—EH Bases.

46 (Pl. 6). The outside was originally completely coated with black glaze-paint; also the inside of the rim. *I.*

47 (Pl. 6). Single handle, round in section; red clay, unpainted. *I.*

---

[1] Identified on the analogy of 46; but it might conceivably belong to a jug like 42.

*Handles, Lugs, etc.*

48 (Fig. 16). Strap-handle, edges slightly raised; coated with brown glaze-paint. *VIa.*

49 (Fig. 16). Strap-handle with central groove in front and behind; light buff clay with traces of glaze-paint. *VIb.*

50 (Fig. 16). Ledge-handle, perforated vertically; probably from a large pitcher like 40 or from a straight-necked jar of the familiar Early Helladic form. *VIa.*

51 (Fig. 16). Pointed ledge-lug; thick ware but with glaze-paint finish. *VIb.*

52 (Fig. 16). 'Wish-bone' handle; buff clay, unpainted.[1] *VIc.*

53 (Fig. 16). Grooved handle. *IV.*

54 (Fig. 16). Rope-handle; buff clay, unpainted. *IV.*

55 (Fig. 16). Rope-handle; whitish clay, unpainted. *IV.*

*Bases.*

56 (Fig. 17). Low cupped base, probably of a saucer like 14. *VIa.*

57, 58 (Fig. 17). High cupped bases, from saucers or 'sauce-boats.' *VIa.*

59–62 (Fig. 17). Bases of large vases; all shew traces of having been completely coated with brown glaze-paint; the clay of all is buff, except that of 62, which is red. *IV.*

63 (Fig. 17). Base of large vase; coated with reddish-brown glaze-paint, inside and outside. *VIc.*

64 (Fig. 17). Base of large vase; traces of coat of glaze-paint. *VIc.*

### *Early Helladic Pottery: Patterned Ware.*

With the exception of the tankard-fragment (65), the fragments of patterned ware are without close analogies on the mainland, and are presumably of local make, but, with the possible exception of the dish-rim (68), do not seem out of keeping with the rather meagre amount of patterned ware at present known. The technique of the smooth cream slip (67, 68) is normal, and dots as ornament occur frequently at Zygouriés.[2] The zig-zag on the bowl-rim (70) recalls pieces from Zygouriés,[3] and the barred handle (71), those of the Zygouriés tankard.[4] The form of the lug with spreading ends (67) may be compared with that of a lug from Eútresis [5] and rather similar lugs from Zygouriés [6] and Orchomenós.[7] An unpierced tubular lug was found in this area in the level immediately above (VI*b*).

---

[1] Two 'wish-bone' handles in heavy ware were found in *IV.*

[2] Cf. *Zygouries* Fig. 88, 1–3; Fig. 89; Pl. XII 2; Kunze, *Orchomenos* III Pls. iv, 1; xx, 4. For dots between bars cf. *Orchomenos* Pl. ix 3.

[3] Cf. *Zygouries* Pl. xi 8, 9.

[4] Cf. *Zygouries* Pl. xiii 1, where the bars are oblique as well as horizontal.

[5] Cf. Goldman *Eutresis* Fig. 115, 2.

[6] Cf. *Zygouries* Pl. iv 12.

[7] Cf. *Orchomenos* Fig. 40. Lugs of this form, but perforated, and 'growing from the rims' of bowls are characteristic in the two earliest occupation levels at Kritsaná in Chalcidice. Their place of origin seems to be N.W. Anatolia. Closely related is *Eutresis* Pl. II, and Fig. 96.

The form of the dish rim (68), at present unparalleled in patterned ware,[1] need not cause surprise. As our knowledge of the EH repertoire increases with fresh excavation, more surprising pieces are likely to turn up. The ornament is not unusual; it is in reality the diagonals within bordering lines, which, arranged vertically or horizontally, were a popular ornament on EH patterned ware; these diagonals are usually repeated so that they form lozenges, but a single pair making the butterfly pattern (an exact parallel to ours, except that the wings are not solid), can be seen on a jar from Orchomenós.[2] Technically the Pelikáta fragment is com-

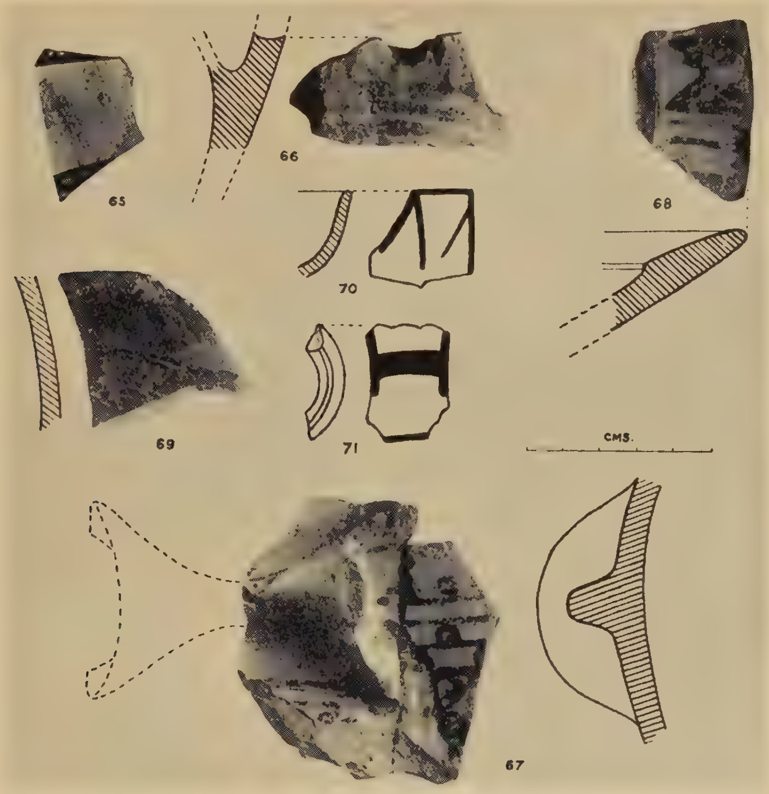

Fig. 18.—EH Patterned Ware.

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[1] A plain dish at Eutresis has a similar form, cf. *Eutresis* Fig 141; cf. also the dish from Mochlos with rather similar ornament (Seager *Mochlos*, Fig. 13).

[2] Cf. *Orchomenos* Pl. iv 1. I do not know other examples of bars on the edge of rims in EH vases, except *Zygouries* Fig. 88, 5; but the small diamonds on the lip of the Zygouriés tankard (*Zygouries* Pl. xiii 1) may be compared, and in any case the edge of the rim was a favourite place for EH ornament (cf. *Eutresis* Figs. 155, 5; 156, 6–8).

parable with the other patterned fragments (66–71) and may well be of local make, but I do not doubt that it is EH.

65 (Fig. 18). Fragment of body of tankard (?); brown glaze-paint on creamy slip; very good finish. The clay is pink in the break. *VIa.*
66 (Fig. 18). Flat vertical handle, perforated near base; dull brown paint on buff slip. *VIa.*
67 (Fig. 18). Unpierced horizontal lug with spreading ends, from body (?) of large vase; slightly lustrous black paint on a white slip. *VIa.*
68 (Fig. 18). Rim of open dish; brown glaze-paint on whitish slip; edge barred. *VIa.*
69 (Fig. 18). Fragment, coated with streaky brown glaze-paint on which is a narrow stripe of darker colour. *VIb.*
70 (Fig. 18). Rim of bowl; zigzag stripe in brown paint on whitish slip. *IV.*
71 (Fig. 18). Strap-handle; bars on the front and stripes along the edges; brown glaze-paint on buff ground. *IV.*

### *Early Helladic Pottery: Vases with Plastic Ornament.*

72 (Pl. 7). Plastic rope-bands; unpainted. *VIb.*
73 (Pl. 7). Plastic incised band; reddish clay, unpainted; thickness, with band, about ·18 m., but well-finished, not coarse ware. *IV.*
74 (Pl. 7). Curved plastic band. *IV.*
75 (Pl. 7). Curved plastic band between horizontals; fragment from large vase coated on the outside with brown glaze-paint. *VIa.*

### *Early Helladic Pottery: Incised or Inscribed—Fragments.*

76 (Pl. 7). Part of lid (?); incised chevrons on edge, plastic band on top, with incised oblique strokes.[1] *VIa.*
77, 78 (Pl. 7). Fragments, scored to receive handle-bases.[2] *VIc* and *IV.*
79 (Pl. 7). Rim of bowl with rough scorings on both sides.[3] *VIc.*
80 (Pl. 7). Sherd with a roughly incised ship (?) and what seem letters or numbers above; on the other side roughly scratched markings.[4] *I.*
81 (Pl. 8). Sherd with incised letters (?); below, uncertain markings in a frame.[4] *I.*

In addition to the above, another incised sherd must be mentioned. Unfortunately I have nothing but a rough drawing of it (Fig. 19). It seems to be part of a tall stem; it is grey throughout and unpolished. For similar plain and dotted bands in combination, cf. an EH sherd from Orchomenós, *Orchomenos*, Pl. 29, 4*c*.

---

[1] For incision on rims cf. *Zygouries* Pls. iv 12, vi 8.

[2] There are many parallels for this practice; cf. especially *B.S.A.* xxvii, Pl. III (*b*) 6.

[3] The purpose of these scorings is not obvious.

[4] I must admit I can make nothing of these fragments (80, 81). They seem to be EH, and though they were found in unstratified fill, there was nothing but EH with them. Nor were they found on the surface, 80 being ·5 and 81 ·9 m. below it. I don't believe they are modern forgeries, and there is nothing left but to suppose that the scratchings were made at the time to which the sherds belong.

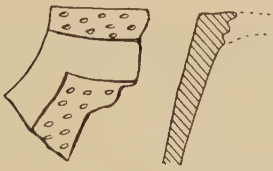

FIG. 19.—EH INCISED WARE.

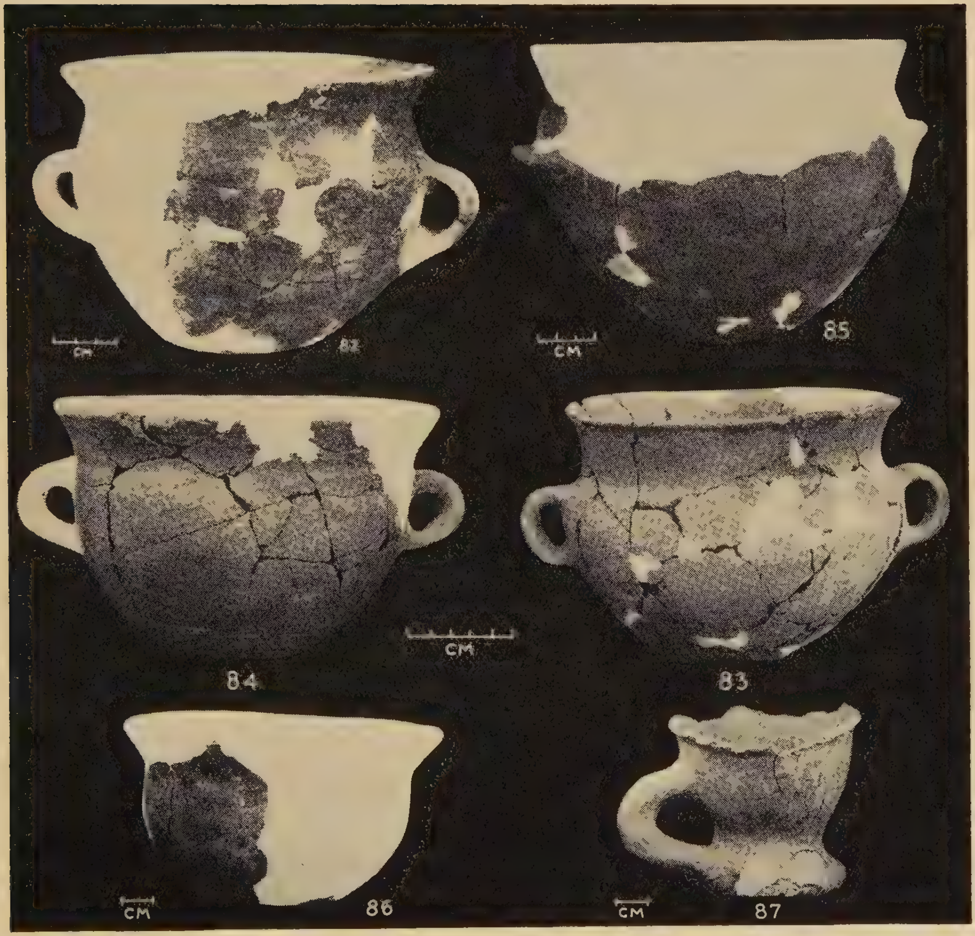
CM
82
CM
85
84
CM
83
CM
86
CM
87

FIG. 20.—EH GREY WARE.

### *Early Helladic Pottery : Grey Ware.*

Technically this grey ware, on account of its unrefined clay might be classed as Coarse ware; but the carefully polished surface permits its inclusion in the class of finer vases.[1] The principal form, the deep two-eared bowl, is certainly an EH form, which can be paralleled from Tiryns (in the patterned ware),[2] Asíne,[3] Orchomenós [4] and Aegina.[5] The interest of this form is that on the one hand it is related to the tankard, as the Tiryns example and our no. 92 with the spreading handles [6] shew, and on the other anticipates a ' Minyan ' form found at Korákou, and thus provides one of the links between EH and MH pottery.

82 (Fig. 20). Deep bowl with two(?) vertical loop-handles; poorly fired clay with grits, but with carefully polished surface; grey with dark patches. *VIa.*

83 (Fig. 20). Fabric and technique as last; light grey-brown and patchy; only one side polished and that not uniformly, while there is a black stain low down between the handles. *VIa.*

84 (Fig. 20). Fabric and technique as last; the colouring ranges from red to grey-brown, mottled. *VIa.*

85 (Fig. 20). Bowl with two (?) ledge-lugs; reddish. *VIa.*

86 (Fig. 20). Small bowl; fabric and technique as last. *VIa.*

87 (Fig. 20). Cup, with flat base; light grey, polished. *IV.*

88 (Fig. 21). Part of stem; same fabric and technique as rest of this group; grey. *VIa.*

89 (Fig. 21). Boat-shaped vase open at one end (the other end is broken); indented edge; fabric and technique as rest of group. *VIa.*

### *Early Helladic Pottery : Unclassified.*

90 (Fig. 21). Side-spouted vase; buff clay, coated with reddish glaze-paint. *IV.*

### *Early Helladic Pottery : Coarse Ware.*

91 (Fig. 22). Rim of domestic jar, vertical lug; plain with smoke-stains on the inside. *VIa.*

92 (Fig. 23). Deep-bowl with two (?) loop-handles; gritty clay with mottled unpolished surface. *VIb.*

93*a* (Fig. 22). Rim of open bowl with ledge-lug (?) on the inside. *VIb.*

93*b* (not illustrated). Rim of open bowl; on the inside ledge-lug with dentated edge; unpainted. *VIc.*

94 (Fig. 22). Rim of open bowl, with impressed plastic strip below. *V.*

---

[1] Cf. the technique of *Orchomenos* 66, p. 74 = Pl. 34, 3 : ' Unreiner, aber nicht sehr dicker Ton, . . . glasiger polierter Überzug mit schwarzen Brandflecken.' This appears to agree exactly with the Pelikáta group, only the colour is rather different. Cf. also Blegen's AI class (*Zygouries*, 76).

[2] Nauplia Museum.

[3] Nauplia Museum.

[4] Cf. *Orchomenos* Pl. 16.

[5] Aegina Museum.

[6] Strictly not grey-ware of this class, as it is unslipped and unpolished.

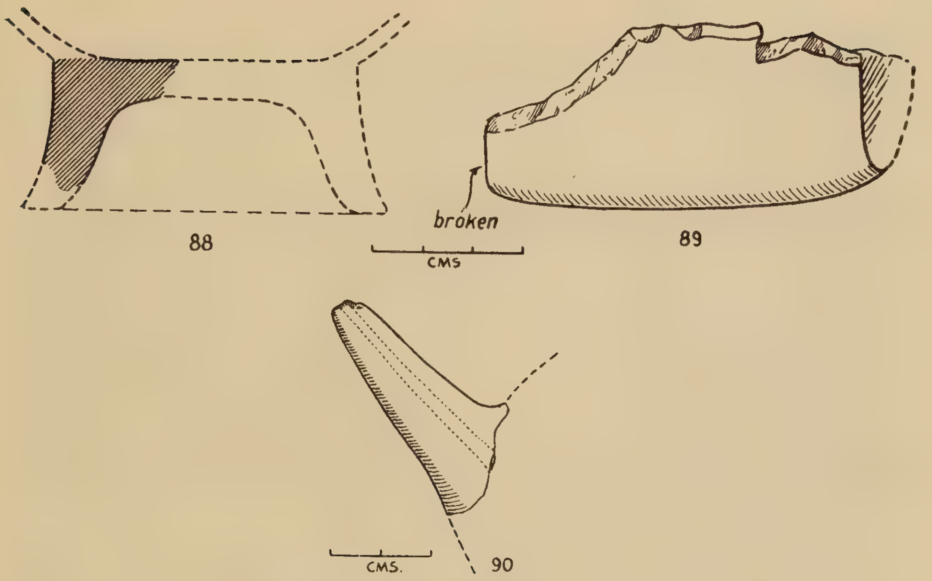
88
broken
CMS
89
CMS.
90

Fig. 21.—EH Grey Ware and Spouted Vase.

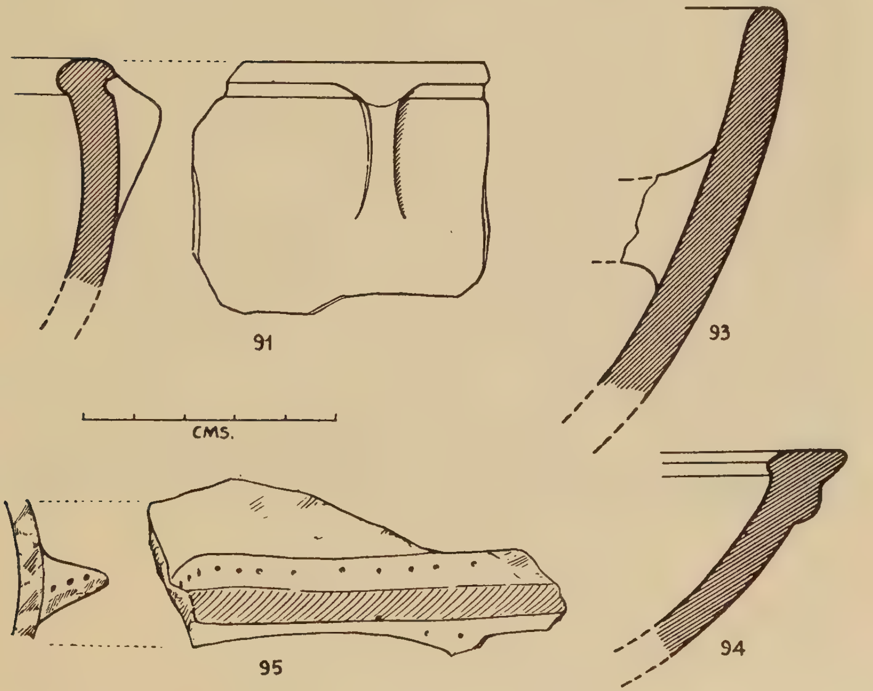
91
93
CMS.
95
94

Fig. 22.—EH Coarse Ware.

95 (Fig. 22). Ledge-lug pitted along the edge. *VIb.*
96 (Fig. 23). Cup; heavy, poorly-finished ware. *IV.*
97 (Fig. 23). Cup; small two-eared lug; fabric as last. *IV.*
98 (Fig. 23). Small dish; cupped base; gritty clay, mottled, unslipped; punctured dots along rim. *I.*

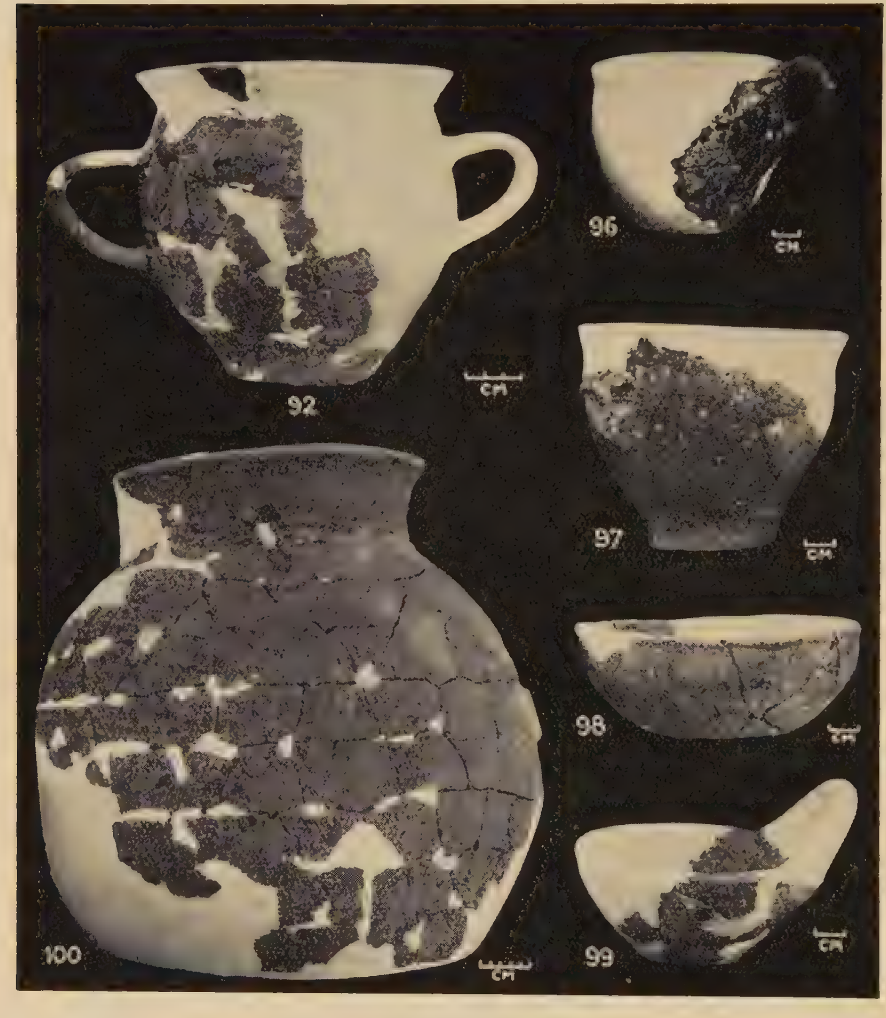

Fig. 23.—EH Coarse Ware.

99 (Fig. 23). Shallow ladle; loop-handle on rim; red with grey to buff slip; thick ware. *I.*
100 (Fig. 23). Pithos, containing burial; traces of loop-handles which joined neck and body; plastic rope round base of neck; grey gritty clay with red surface. *VIa.*

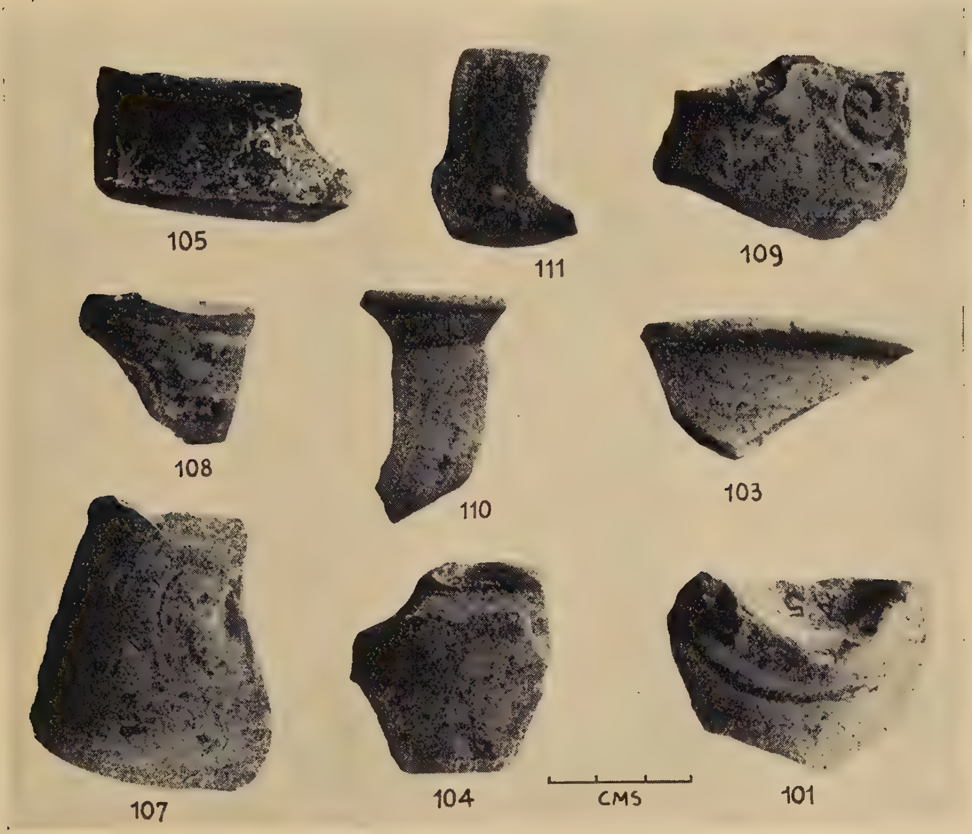
105
111
109
108
110
103
107
104
CMS
101

FIG. 24.—MH 'MINYAN.'

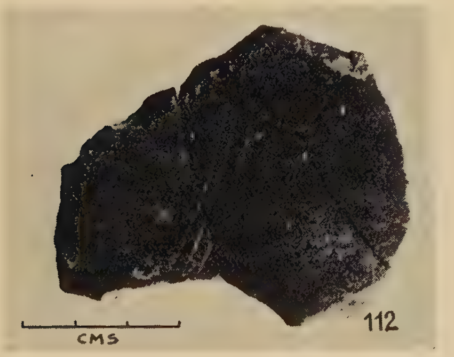

FIG. 25.—MH 'MINYAN.'

### *Middle Helladic : ‘ Minyan.’*

The distribution of the ‘ Minyan ’ sherds has already been mentioned. All except one come from Areas IV or VI. The total number is 90, of which 20 come from Area VI in the same level (*i.e.* the earth fill) as the

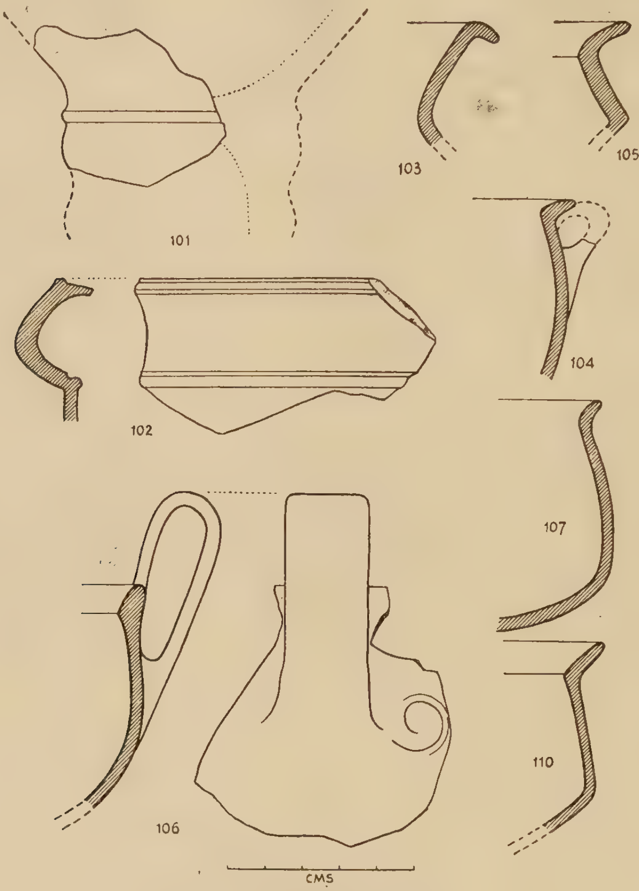

FIG. 26.—MH ‘ MINYAN.’

LH III.[1] All the sherds except two (102, 105) are in poor condition; on the surface and in the break soft and powdery. Their colour is usually

---

[1] These are the details:—

| | | |
|---|---|---|
| Area IV. | In earth above stones | 32. |
| | In stones, to 1·5 m. | none. |
| | In stones, 1·5–3 m. | 36. |
| Area VI. | In earth fill above stones (VI*c*) | 20. |
| | In rubble layer (VI*b*) | 1. |
| Outside Areas I–VI | | 1. |

bluish-grey, like the ‘ Minyan ’ from Olympia and Thermos, but a few have the normal grey tone. Sixteen can be recognized as being parts of the familiar stemmed goblets, and eight as parts of cups with high-swung handles. Of the latter, four have lightly-incised spiral volutes in the neighbourhood of the base of the handles. No. 112 (black) has a curving band composed of three parallel lines, and may be part of the body of a goblet.[1]

It should be noted that a few sherds were found which are grey on one face and buff on the other.

101 (Figs. 24, 26). Part of body and ringed stem of goblet; pale grey. *NA.*
102 (Fig. 26). Neck of goblet; the rim is moulded and there is a groove at the junction of neck and body. *IV.*
103 (Figs. 24, 26). Rim of goblet; pale grey with blueish tinge, slightly polished. *IV.*
104 (Figs. 24, 26). Rim of goblet; remains of short strap-handle joining rim and shoulder. *IV.*
105 (Figs. 24, 26). Rim and shoulder of goblet; black, polished. *IV.*
106 (Fig. 26). Part of cup with high strap-handle; lightly incised spiral starting from the base of the handle to the right; greenish grey. *VIb.*
107 (Figs. 24, 26). Part of cup with slightly everted rim; incised spiral; blueish grey, slightly polished. *IV.*
108 (Fig. 24). Fragment of similar cup; traces of incised spiral. *VIc.*
109 (Fig. 24). Fragment of cup with bed for strap-handle; incised spiral to right. *IV.*
110 (Figs. 24, 26). Part of cup with sharply offset rim. *VIc.*
111 (Fig. 24). Part of strap-handle starting from rim. *NA.*
112 (Fig. 25). Part of body (?) of goblet; incised triple band; grey clay with hard black surface. *IV.*

### *Late Helladic III.*

The Late Helladic all[2] comes from Area VI, and from the earth fill above the stones. Sixty pieces were identified, but there may be more. All were in shocking condition. Thirty-five are parts of kylikes with high stems, three at least of cups with low stems or krateriskoi[3]; one comes from an unusually large high-stemmed vase (116). Of these thirty-nine, nine shew traces of a coat of glaze-paint, a few seem to have painted zones, and a few high-handles have diagonal bars. The paint has the usual Mycenaean tones, brown, brownish-red or brownish-yellow. The bases of the three certain krateriskoi and of at least twelve of the kylikes are strongly cupped;

---

[1] Cf. *Eutresis* Fig. 199. Another sherd (not inventoried) shews similar lines on a reddish buff surface.

[2] Except the few from Stavrós, Asprosykiá and Hágios Athanásios (cf. p. 15).

[3] Not including 120, 121 which are doubtful; there are also two loop-handles (128, 129) which perhaps belong to krateriskoi.

others are less strongly cupped or almost flat. But in many cases the precise form cannot be determined. Most, I think, are of local make.

There are fragments of two bowls with horizontal ribbon-handles attached to the rim (136).

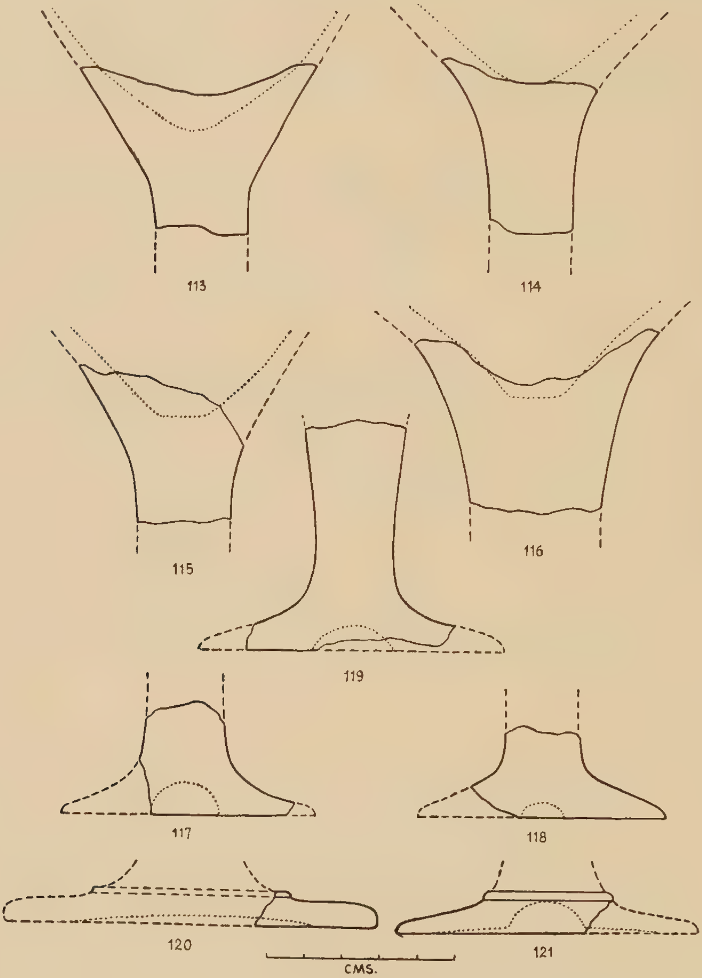

Fig. 27.—LH III. Kylikes and Krateriskoi.

*Kylikes.*

113 (Pl. 8, Fig. 27). Part of cup and stem of kylix; whitish clay with traces of coat of reddish-brown glaze-paint, inside and out. *VIc.*

114 (Fig. 27). Part of stem and base of cup of kylix; reddish clay; glaze-paint as last, but no traces on the inside. *VIc.*

115 (Fig. 27). As last; traces of glaze-paint on the outside. *VIc.*

116 (Fig. 27). Part of large kylix; reddish clay, unpainted. *VIc.*

117 (Fig. 27). Part of foot of kylix, strongly cupped; buff clay, unpainted. *VIc.*

118 (Fig. 27). As last, but less cupped. *VIc.*

119*a* (Fig. 27). Stem and foot of kylix; traces of coat of good dark-red glaze-paint. *Stavrós.*

119*b* (not illustrated). Three kylix fragments. *Stavrós.*

119*c* (not illustrated). Part of high-handled kylix (?); buff clay, white slip. *Asprosykiá.*

119*d* (not illustrated). Two kylix fragments. *Hágios Athanásios.*

120 (Pl. 8, Fig. 27). Part of foot with moulding [1]; coated with brown glaze-paint outside and below. The base may have been cupped as in 121. *VIc.*

121 (Pl. 8, Fig. 27). As last.[1] *VIc.*

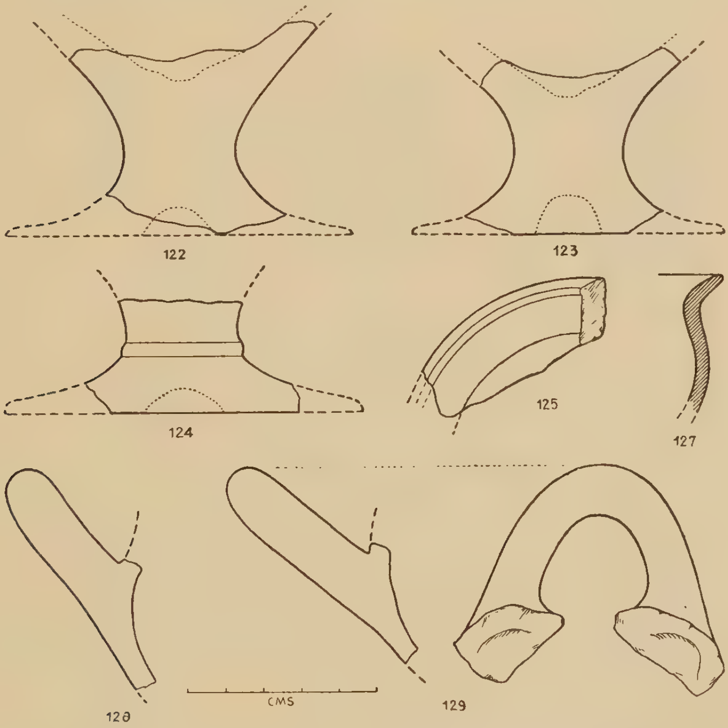

FIG. 28.—LH III. KRATERISKOI; LOOP-HANDLES.

*krateriskoi.*

122 (Pl. 8, Fig. 28). Stem and part of cup and foot; coated with reddish-brown glaze-paint. *VIc.*

123 (Pl. 8, Fig. 28). As last, but the glaze-paint is brown. *VIc.*

124 (Pl. 8, Fig. 28). As last but with slightly moulded ring. *VIc.*

---

[1] Perhaps from a krateriskos.

125 (Fig. 28). Fragment of foot with moulded edge; coated with brown glaze-paint outside and below. *VIc.*
126*a* (Pl. 8). Part of stem and cup; whitish clay. *Asprosykiá.*
126*b* (not illustrated). Part of stem. *Hágios Athanásios.*
127 (Fig. 28). Part of rim; band of pale red glaze-paint round the edge; traces of pattern below; inside coated with brown glaze-paint. *VIc.*

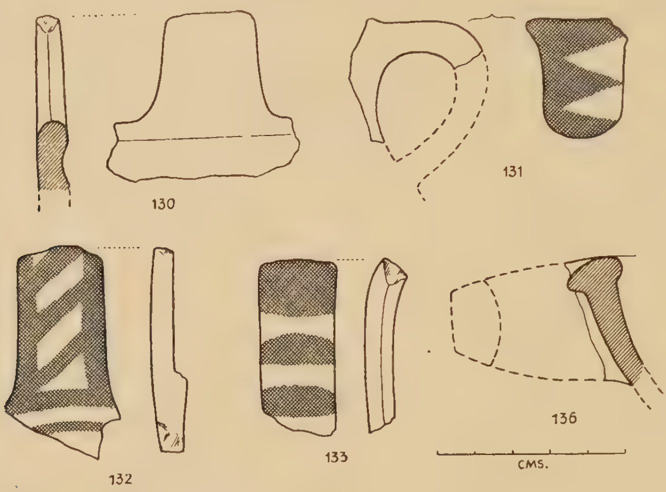

FIG. 29.—LH III. HANDLES.

*Handles.*

128, 129 (Fig. 28). Rolled horizontal handles, probably from krateriskoi. *VIc and Asprosykiá.*
130 (Pl. 8, Fig. 29). Strap-handle rising from rim; reddish buff clay. *VIc.*
131 (Fig. 29). Strap-handle and part of rim; barred on the outside and coated on the inside with brown glaze-paint. *VIc.*
132 (Pl. 8, Fig. 29). Strap-handle; barred with reddish-brown glaze-paint; the vase itself coated on the inside with similar glaze-paint. *VIc.*
133 (Pl. 8, Fig. 29). Strap-handle with similar ornament and paint. *VIc.*
134 (Pl. 8). Strap-handle coated on both sides with brown glaze-paint. *VIc.*
135 (Pl. 8). Strap-handle; the vase to which it belongs was also coated with brown glaze-paint on the inside. *VIc.*
136 (Pl. 8, Fig. 29). Rolled rim of wide bowl with horizontal band-handle; coated inside and outside with brownish-red glaze-paint. *VIc.*
137 (not illustrated). Handle as last, but smaller. *VIc.*

*Miscellaneous objects.*

In addition to the pieces inventoried, a great many blades [1] and chips of obsidian, as well as of flint [2] were found. The obsidian looks like Melian.

---

[1] 30 blades come from the pithos-burial (Area I).
[2] 30 blades in all, of which 8 are from Area I.

I have not ascertained the provenance of the flint or of the stone of which the axes, celts and grinders [1] are made. The small pestle (178) is of the same form as those from Zygouriés.[2] I do not know close EH parallels to the rather skilfully modelled animal figurines, but the goat-heads on the sauce-boats [3] and figurines from Zygouriés [4] and the bull-vase from Eutresis [5] may be compared.

Anchor ornaments are found in Central Greece,[6] and are relatively common in Early Bronze Age strata in Macedonia, especially at Kritsaná in Chalkidike.[7]

The bone whorl has a close parallel at Zygouriés.[8]

Flat cylindrical stone beads like nos. 175, 176 were found at Zygouriés.[9]

The gold-leaf strip was perhaps a small mask like those found at Mochlos.[10]

*Objects of Terracotta.*

138 (Fig. 30). Spindle-whorl. Brick-red. *IV.*
139 (Fig. 30). Spindle-whorl. Reddish-buff. *IV.*
140 (Fig. 30). Spindle-whorl. Black. *IV.*
141 (Fig. 30). Spindle-whorl. Grey. *IV.*
142 (Fig. 30). Spindle-whorl. Buff. *IV.*
143 (Fig. 30). Spindle-whorl. Grey. *IV.*
144 (Fig. 30). Spindle-whorl. Brown. *IV.*
145 (Fig. 30). Spindle-whorl. Mottled. *I.*
146 (Fig. 30). Spindle-whorl. Reddish. *I.*
147, 148 (not illustrated). Discs made from the sides of large coarse vases. *IV.*
149 (Pl. 9). Bull, light reddish with traces of glaze-paint. *VIb.*
150*a*, *b* (not illustrated). Fragments of similar bulls. *I.*
151 (Pl. 9). Bull, light reddish; plastic discs represent eyes,[11] tiny holes the nostrils. *VIa.*
152 (not illustrated). Head of similar bull; the horns are missing. *IV.*
153 (Pl. 9, Fig. 31). Sheep; buff. *NA.*
154 (Pl. 9, Fig. 31). Hook; perforated near top. *II.*

---

[1] 7 in all, of which one is from Area I.

[2] Cf. *Zygouries* 196, Fig. 186; also *Alt Ithaka* Band II, Beil. 61, (*b*) 6.

[3] Cf. *Zygouries* Pl. x 1, 2.

[4] Cf. *Zygouries* Pl. xxi 1–3; and Blegen's remark *ibid.* 185, 186. The body of a small dog *ibid.* 186 no. 3 is not illustrated.

[5] Cf. *Eutresis* Pl. vii.

[6] From Schisté, several in Chaeroneia Museum; cf. Wace and Thompson, *Prehistoric Thessaly* Fig. 140*f*; I believe one has been found at Corinth, but I have not the reference. For an example from Malta, cf. Murray, *Excavations in Malta* Part II, Pl. xvii, 11.

[7] Cf. Heurtley *Prehistoric Macedonia* Part II, Fig. 67 *f-j*.

[8] Cf. *Zygouries* Fig. 181, 1.

[9] Cf. *Zygouries* Pl. xx 13, 15.

[10] Cf. Seager *Mochlos* Figs. 8, 9, especially II, 1 and 7.

[11] Cf. *Zygouries* Pl. x, 1.

155 (Pl. 9, Fig. 31). Seal or stamp; incised five-petalled flower with circle in the middle; traces of dark glaze-paint on back. *I.*
156 (Pl. 9, Fig. 31). Head of nail (?); traces of reddish glaze-paint. *I.*

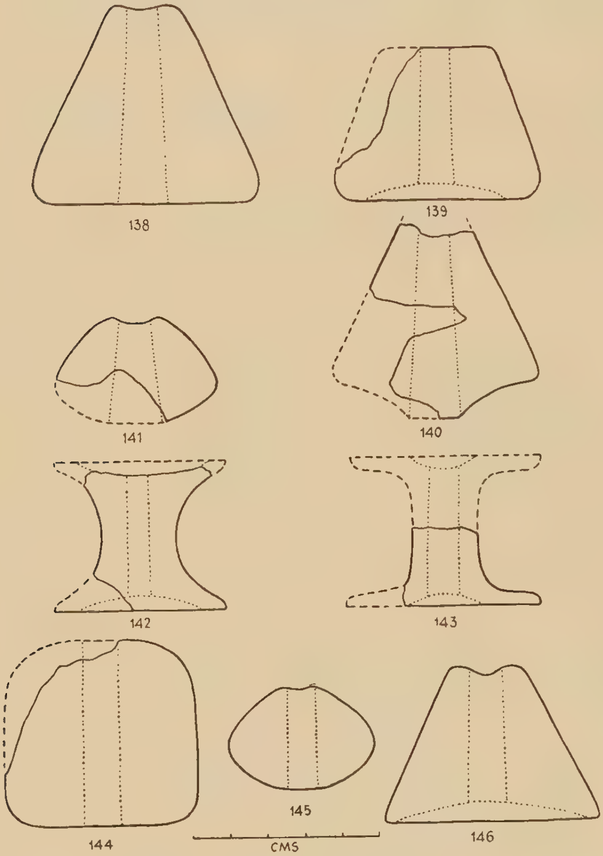

Fig. 30.—Spindle-Whorls.

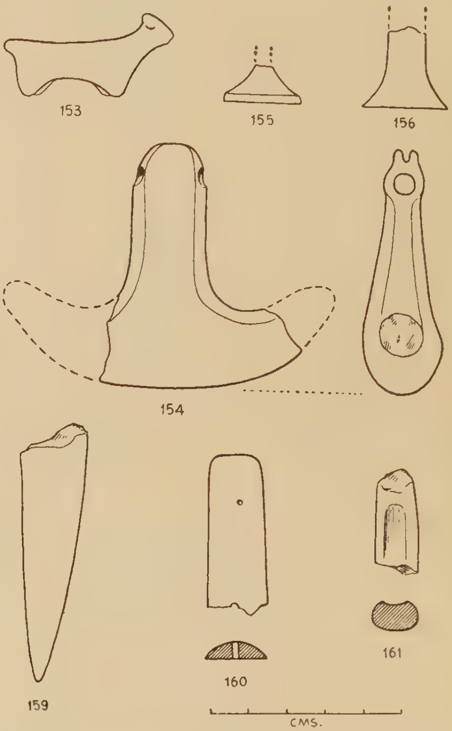

Fig. 31.—Miscellaneous Objects.
(Scale of 156 one half that of the others.)

*Bone or Ivory objects.*

157 (not illustrated). Part of boar's tusk. *I.*
158 (Pl. 9). End of bone, shaped to form spindle-whorl (?). *I.*
159 (Fig. 31). Needle. *VIa.*
160 (Fig. 31). Bone or ivory mount for knife-handle; two rivet holes. *NA.*
161 (Fig. 31). End of bone tool, bevelled end, grooved centre. *VIa.*

*Bronze objects.*

162 (Pl. 9). Fragment of blade, with rivet-hole. *VIc.*
163 (Pl. 9). Fragment of blade, curled over at one end, with rivet-hole. *VIc.*

164 (Pl. 9). Fragment of blade (?). *VIc.*
165 (Pl. 9). Fragment of blade, with rivet-hole. *I.*
166 (Pl. 9). Hair-ring of bronze wire. *I.*

*Gold.*[1]

167 (Pl. 9). Piece of gold-leaf; four holes for attachment along the left edge [2]; row of *repoussé* dots along the left edge and a double row across the middle; in the upper half, crossing diagonal rows of similar dots, and perhaps in the lower half too; but the arrangement is not clear here. *I.*
168 (Pl. 9). Perforated disc or sequin; thickness *ca.* ·001 m. *I.*

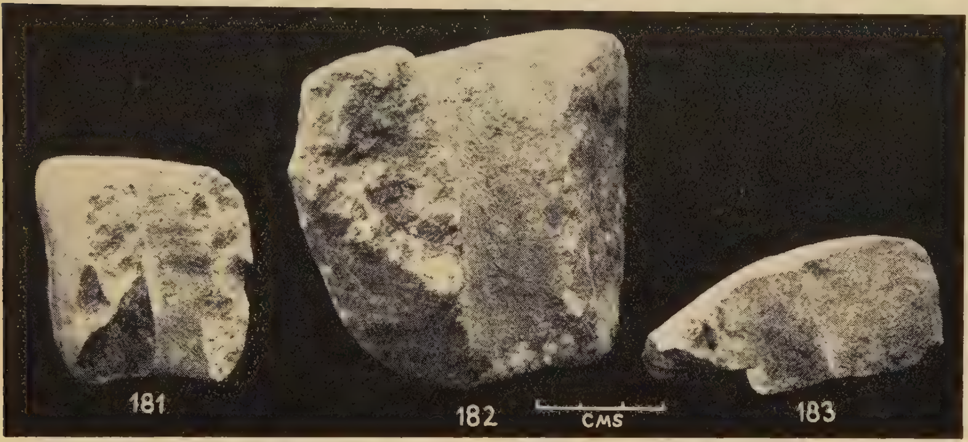

FIG. 32.—STONE OBJECTS.

*Stone.*

169 (Pl. 9). Obsidian blade; probably Melian but more transparent and streaky than the usual Melian. *VIb* or *c.*
170 (Pl. 9). Obsidian blade. *I.*
171 (Pl. 9). Obsidian arrow-head. *I.*
172 (Pl. 9). Flint saw, one serrated edge; light brown, cutting edge polished. *NA.*
173 (Pl. 9). Flint saw, same colour as last; two cutting edges. *NA.*
174 (Pl. 9). Flint saw, one serrated edge; grey. *I.*
175 (Pl. 9). Button (?); black steatite (?); thickness ·003 m. *I.*
176 (Pl. 9). Button (?); whitish stone; thickness ·005 m. *I.*
177 (Pl. 9, Fig. 34). Celt; bluish-grey stone. *VIa–VIb.*
178 (Pl. 9). Grinder for cosmetics (?); whitish stone. *I.*
179 (Fig. 34). Celt; butt-end; bluish-grey stone. *VIa.*
180 (Fig. 34). Celt; butt-end; grey speckled stone. *I.*
181 (Figs. 32, 34). Perforated axe; whitish stone. *IV.*
182 (Figs. 32, 34). Perforated hammer. *NA.*

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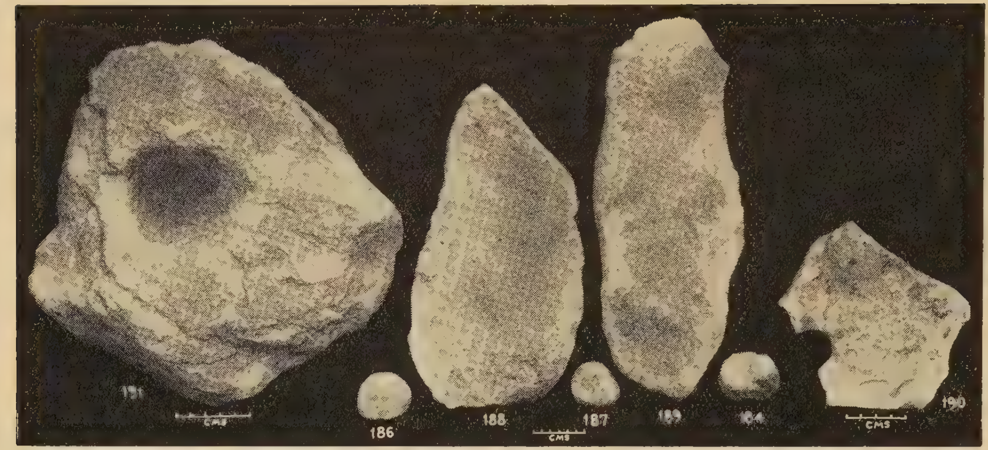
[1] Small scraps were found in Area IV and one in Area VI.
[2] The right edge is broken.


191
CMS
186
188
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189
184
CMS
190

FIG. 33.—STONE OBJECTS.

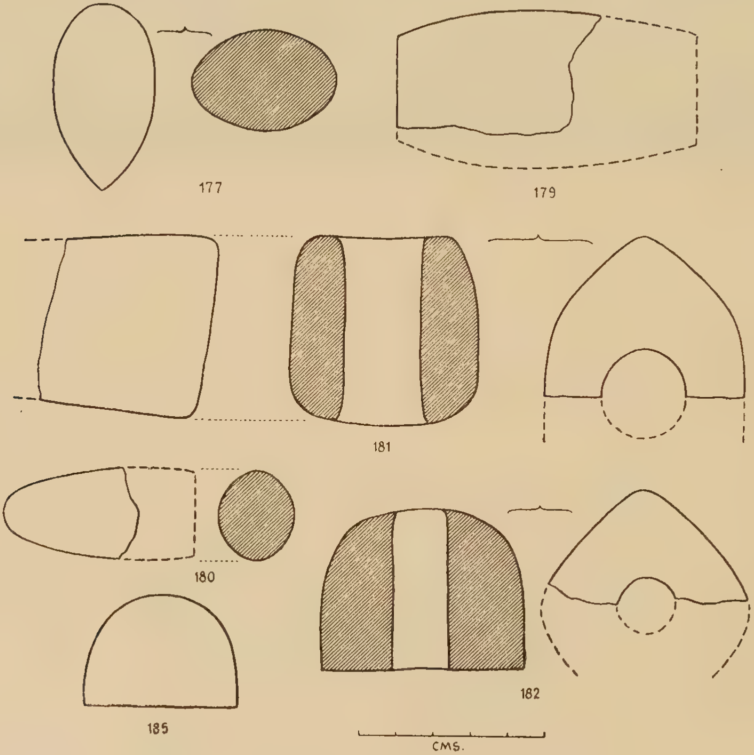
177
179
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FIG. 34.—STONE AXES, ETC. (Scale of 182 one half that of the others.)

183 (Fig. 32). Fragment of perforated stone; material as 180. *IV.*
184 (Fig. 33). Grinder; roughly spherical; quartz (?). *NA.*
185 (Fig. 34). Grinder; semi-spherical. *NA.*
186 (Fig. 33). Grinder; soft whitish stone. *I.*
187 (Fig. 33). Grinder; whitish quartz. *I.*
188 (Fig. 33). Quern, unworked at back. *IV.*
189 (Fig. 33). Saddle-quern. *I.*
190 (Fig. 33). Large unworked stone, with perforation. *IV.*
191 (Fig. 33). Pivot-stone. *I.*

## III. Conclusions

*Early Helladic remains.* In describing the EH material from Pelikáta, most of our comparisons have been drawn from Zygouriés, Eútresis or Orchomenós, sites which on account of their distribution and on account of the fact that the material from them has been carefully published may be taken as representative, Zygouriés of the Peloponnese and the others of Central Greece. Two questions arise: is it possible to fix more precisely the relationship of Ithaca to the mainland; that is to say was the starting-point of the emigration to Ithaca the Peloponnese or Central Greece; and in which of the three phases of the EH period did it take place? It should be possible to obtain an answer to these questions by comparing the characteristics of each of the sites in each of the three phases with the material from the lowest level in Area VI at Pelikáta, which I take to represent the earliest occupation. But the earliest phase of the EH period can be eliminated at once, because patterned ware occurs in this stratum at Pelikáta, but is not found at any of the other sites before the latest phase except at Zygouriés, where it was found in the middle phase[1] also in small quantity. To this point I shall return later. Similarly the latest phase can be ruled out because the bulk of the sherds in this stratum at Pelikáta are completely coated with good glaze, a technique which in the mainland sites is very rare after the middle phase. The middle phase remains, and it will be seen from the following diagram that the Ithaca stratum corresponds closely with Zygouriés in that phase, but less closely with Eútresis and still less so with Orchomenós.[2] I think it is evident that the Ithacan EH pottery was derived directly from the Peloponnese and in the middle phase of the EH period.[3]

We can go a step further. The pithos in Area VI containing the burial rested on virgin soil, and though the level of virgin soil is here higher must,

[1] *I.e.* below the house-floors. Cf. *Zygouries* 101.

[2] Assuming a rough chronological equation between the phases at the three sites.

[3] A further point of correspondence with the Peloponnese, is that, whereas 'sauce-boats' disappear in the latest phase in Central Greece, at Pelikáta several fragments were found *outside* the clay layer in Area VI (*i.e.*, with remains of the later occupation) and at Zygouriés they were 'abundant' in the latest phase.

I think, belong to the same early period as the remains in the clay layer; consequently the two white-clay vases of Corinthian fabric (17, 43) associated with the burial must also belong to that period, and their presence there indicates that they were actually brought by the first settlers; and this, taken in conjunction with the close correspondence of the rest of the material from that layer with the material from Zygouriés, affords strong presumptive evidence that it was actually from the Corinthia that the settlers themselves came.

INCIDENCE OF FORMS AND TECHNIQUE IN THE MIDDLE PHASE OF THE EARLY HELLADIC PERIOD ON THE MAINLAND COMPARED WITH THE EARLIEST PHASE AT PELIKÁTA.

| | Pelikáta, Area VI, clay stratum. | Zygouriés, middle phase. | Eútresis, middle phase. | Orchomenós, middle phase. |
|---|---|---|---|---|
| *Forms.* | | | | |
| 'Sauce-boats' | comparatively common | common | common | common |
| Askoi | not certain | not recorded before latest phase | none before latest phase | common |
| Tankards | not certain | not recorded before latest phase | none before latest phase | typical |
| Bowls with pronounced incurving rims | some | rare | rare | common |
| Raised bases | common | typical | typical | very rare |
| Flat handles with vertical perforation (cf. 50) | one | not definitely recorded | begin | none before latest phase |
| *Technique.* | | | | |
| Completely coated with good glaze | typical | typical | typical | typical |
| Poor glaze | some | begins | not recorded before latest phase | typical only of latest phase |
| Partly coated | some | "not abundant—at home in latest phase" | none before latest phase | none before latest phase |
| Patterned | some | some | none before latest phase | none before latest phase |

With regard to time also we can go a step further. At Zygouriés both patterned ware and partly-coated ware appear at the *end* of the middle

EH phase,[1] but become ' at home ' only in the latest. At Pelikáta in the clay layer both are present: but that the latest EH phase has not been reached is clear from the fact already noted, that the thin-glaze technique is rare among the Pelikáta sherds. The moment of the arrival of the settlers must then fall towards the end of the middle EH phase. On the chronology in favour at present this would mean a date about 2200 B.C.

If the inferences as to origin are correct, it is interesting to find settlers from the Corinthia in the Ionian islands at this time, anticipating the Corinthian expansion in this direction, which was to take place 1400 years later.

*Middle Helladic remains.* The ' Minyan ' pottery in Ithaca, taken in conjunction with that from Lefkás, where it is associated with new burial customs,[2] may be accepted as evidence of the appearance of a new element in the population. Indications that this new element came from Central Greece are the blueish tone of the pottery [3] and the spirals below the handles [4]; and two respects in which the later EH pottery of Ithaca (*i.e.* that which was found outside the clay layer in Area VI, and which presumably outlasted the EH period of the mainland) differs from the normal Corinthian EH (I mean the ' wishbone ' handles (52) and the tankards with handles starting from the rim) may be attributed to influences from the same direction. For, though these are not actually ' Minyan ' characteristics, they occur in either EH or MH contexts in Central Greece [5] but not in the Peloponnese; and, if to these are added the anchor-shaped hook and the perforated axes, the prevalence of which in Central Greece [6] also differentiates it from the south, it becomes almost certain that the immediate point of departure of the new arrivals lay just south of Thessaly. The origin of most of these elements lay farther north, in Macedonia, where they are at home in Early Macedonian (Early Bronze Age) strata,[7] but by the MH period they had become acclimatized in Central Greece, whence they would be transmitted to Ithaca along with ' Minyan ' pottery.

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[1] Cf. *Zygouries* 100, 101.

[2] Cf. Myres, *Who Were the Greeks?* 395–399.

[3] Characteristic of the ' Minyan ' at Thérmos; and at Olympia, where the same origin can be inferred; also for the spirals (cf. *A.M.* xxxvi 168 Figs. 5–7).

[4] On the painted ware of Lianokládi III, a stratum which lay immediately above that containing EH (cf. *P.T.* Fig. 126*c*). Cf. note 1.

[5] For EH ' wish-bone ' handles cf. *Orchomenos* Pl. 30, 4*a*, *b*; for MH ' wish-bone ' handles, *P.T.* Fig. 134 (Lianokládi III); for tankards with handles starting from the rim, *P.T.* Fig. 126*c*, *d* (Lianokládi III).

[6] Cf. *P.T.* Fig. 140*f* (from Schisté); there are several from the same site in the Chaeroneia Museum. Perforated axes from Central Greece are also to be seen in the Chaeroneia Museum.

[7] Cf. Heurtley, *Prehistoric Macedonia*, now in the press. It is worth noting that askoi, tankards, and bowls with pronouncedly incurving rims are common at Orchomenós in the middle phase, but scarcely occur at Eutresis or in the Peloponnese before the latest phase. But these are all typical of the Early Bronze Age in Macedonia, occurring in the lowest

*LH III remains.* It is not easy, on account of their small numbers and bad condition, to draw firm conclusions from the LH III fragments. As far as the forms go, these appear to be standard LH III of the thirteenth century, the period when the plain-stemmed kylix had its greatest popularity. But there are indications that it is the latest phase of that period which is represented. Thus the kylix-profiles, where recoverable, shew loss of curve and the triangular form which becomes typical of the ' granary ' style period[1]; some bases have a conical cup, or are scarcely cupped at all. Kylix-bases have not, as far as I know, been systematically studied as yet; but, as far as my own observations go, the standard kylix of the thirteenth century has a wide flat base with a small rather deep carefully-rounded cup[2]; bases of later kylixes are narrow[3] and often have a conical cup,[4] or the cup starts almost from the edge, as in Protogeometric bowls and kraters.[5]

Some of the bases are completely coated on the outside, a few both inside and out; a few have thin streaky paint. The krateriskoi are heavy, unlike the low-stemmed goblets of an earlier period.[6]

But if these elements shew lateness, there are indications, mostly negative, that the full ' granary ' style (twelfth century) has not been reached. There is no evidence of the ringed or swollen stems, popular in Cephallenia and in Ithaca itself[7] in the twelfth century, nor of the loop-handled bowls with raised base, which, though fairly common in the thirteenth century, are more especially associated with the ' granary ' style of the twelfth.[8] Paint, where preserved, is usually thick and of fairly good quality.

It is, I think, clear that the phase in the development of local LH III represented at Aetós,[9] which I would equate with the ' granary ' style at Mycenae and place within the twelfth century, has not been reached, and the impression produced is that the true analogies are to be found in the

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levels; cups with high throats (' mit hohem Hals ') also are common to EH I–II strata at Orchomenós and the lowest Early Bronze Age levels in Macedonia, but do not occur in the Peloponnese (*Orchomenos*, p. 55). Does the incidence of the forms indicate the direction from which the EH culture entered Greece?

[1] *E.g.* 113, 115.

[2] Cf. *B.M. Vases* I, Fig. 147 (A 700); 119 is the best example here.

[3] *E.g.* 117, 118.

[4] As in the krateriskoi 122, 124; and cf. *B.S.A.* xxxiii 38 Fig. 83 (from Aetós).

[5] Cf. *B.S.A.* xxxiii 44 Fig. 17 (from Aetós).

[6] Cf. *B.M. Vases* I, Fig. 205 (A 861).

[7] Cf. *B.S.A.* xxxiii 38 Fig. 8.

[8] Cf. *B.S.A.* xxv Pl. viii, *c*, *d* (from Mycenae).

[9] Cf. *B.S.A.* xxxiii 63, 64.

later elements of the Lakkéthra group, which Marinátos, rightly I believe, attributes as a whole to the end of the thirteenth and the beginning of the twelfth century.

If this impression is correct, it follows that the LH III pottery of Pelikáta belongs to the turn of the thirteenth century, the moment when the transition to the ' granary ' style was about to take place.

The infinitesimal quantity of ' Minyan ' and Mycenaean which turned up in proportion to the mass of EH suggests that there was no pure ' Minyan ' or Mycenaean settlement on Pelikáta, and that the EH pottery lasted until the time of the Mycenaean, when both came to an end simultaneously.

If the ' Minyan ' pottery in Lefkás really implies the arrival of a new element in the population, then the ' Minyan ' pottery in Ithaca probably reflects the same event, but it was not accompanied by a radical change in the local pottery, and from this fact it may be inferred that the newcomers were few in number, and remained in a minority.

Mycenaean seems to have become common in the Ionian islands only in the thirteenth century, *i.e.* later than in the East Mediterranean. The Pelikáta kylikes may have come from no further than Cephallenia, where Mycenaean was made in fairly large quantities,[1] and where there is reason to think, from the introduction of chamber-tombs,[2] that the population was reinforced by a Mycenaean element from the mainland. But whether this is so or not, it is not remarkable that Mycenaean sherds should be found in an island like Ithaca, whose population took part in the Trojan war and who, if they were at all like their modern descendants, must have been much addicted to travelling.

The following then may be inferred from the archaeological evidence about the early history of North Ithaca:—

Somewhere about 2200 B.C., refugees or colonists, whichever they were, from the Corinthia occupied the top of Pelikáta hill. They surrounded it with a rough wall of large stone blocks. Their houses were simple affairs with rubble walls and thatched with reeds plastered with mud. At some time a building of fairly good ashlar masonry was erected at the highest point. Their custom in burying was to place some of the bones, not the complete skeleton, in pithoi, which they may have laid below the floors of their houses, though this cannot be proved. They were in contact with their neighbours to the East, as obsidian blades and flakes, and rare objects of gold and bronze shew. The ' Minyan ' pottery may mean the arrival of new people, the same who introduced new burial customs into Lefkás, but the local pottery was scarcely affected by their arrival and not at all by the later introduction of Mycenaean pottery. Soon after the beginning of the twelfth century the settlement came to an end, and the hill was abandoned; nor was it again used, except for Hellenic or Hellenistic burials outside the old circuit-wall, until Venetian times.

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[1] To judge from the pottery groups at Lakkéthra or Diakáta.

[2] Cf. Καββαδίας, Προϊστορικὴ Ἀρχαιολογία, pp. 335–373.

Leake, whose judgment and flair for topography cannot be questioned, thought that Pólis best corresponded to the position of Odysseus' city as described in the poem.[1] But, Homeric topography apart, there are only two places in Ithaca which could, I think, fulfil the requirements of a settlement in prehistoric times. One is the saddle at Aetós, and the other is the Pólis-Pelikáta ridge.[2] At Aetós no settlement-remains of the right period have been identified, though the earliest pottery associated with the cairns probably belongs to the beginning of the twelfth century.[3] As the nucleus of a settlement, Pelikáta has the far better natural advantages already mentioned—three harbours, all visible from the summit, in all of which ships could be beached as they are to-day, when winds were bad; a wide prospect; a fairly level and easily defensible summit; and a first-rate water-supply. Whether they wished to practice or to be secure from piracy, the place invited occupation by settlers, and once occupied, would naturally remain the capital of the island. The fact that Stavrós ridge has retained the name Pólis cannot be neglected as an argument. As a place-name Pólis is very rare in Greece, but the fame of the *polis* which had lain below the palace of Odysseus would account for its survival.

Finally there is the evidence of the remains. They shew that a settlement, surrounded by a fortified wall existed here from about 2200 B.C. and permit the inference that it lasted to about the time which tradition assigns to the Trojan War, when it came to an end. It is clear that those who think, on other grounds, that Pelikáta is the site of the palace of Odysseus can now support their case by respectable archaeological evidence.

W. A. HEURTLEY.

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[1] And this description implies an acropolis, which can have been only at Pelikáta. Pólis represents the later expansion of the settlement towards the harbour.

[2] Vathý is unlikely; it is too low-lying and shut in; from the neighbouring heights only the approach from the mainland could be commanded; the harbour is a cul-de-sac, not a port of call like the Pelikáta or Aetós harbours.

[3] Cf. *B.S.A.* xxxiii 64; but also *B.S.A.* xxxiv (corrigenda to preceding).

# EXCAVATIONS IN ITHACA, III

(PLATES 10–17)

## THE CAVE AT PÓLIS, I

The following special abbreviations are employed:

*Evolution* = *Evolution of the Tripod-lebes* (pp. 74–129 below).
*Olympia* = *Olympia*, Band IV; *die Bronzen.*
*Delphes* = *Fouilles de Delphes* Vol. V.
*De Ridder, Acr.* = *A. De Ridder, Catalogue des bronzes trouvés sur l'Acropole d'Athènes.*
*W.M.B.H.* = *Wissenschaftliche Mitteilungen aus Bosnien und der Herzogowina.*

THE site lies on the north-west side of the Bay of Pólis (Fig. 1), in a gash on the hillside where rock has fallen away, leaving a sheer face on the south of the site and the débris of undercliff on the north. The sea lies to the east and the entrance to the site on the north is blocked by fallen rocks (Fig. 3). Its position with regard to the other excavations round

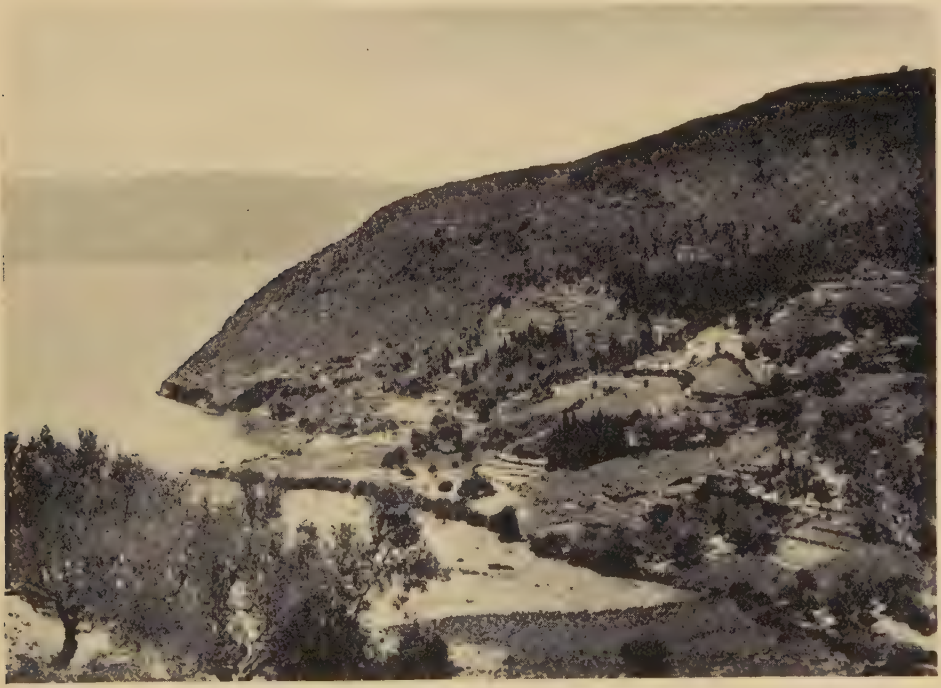

FIG. 1.—PÓLIS BAY.

Stavrós in North Ithaca can be seen on the general plan of the area (Fig. 2 of the preceding article); our Fig. 2 shews the steep hill-side round the site.

The cave was accidentally discovered by the proprietor Louisos when digging a pit for a lime-kiln. Schliemann[1] found the excavation in progress in 1864, but did not realize its importance. He published two inscriptions from it, one of which[2] I have been fortunate enough to recover[3] for the Stavrós Museum; it consists of two slabs dedicated to Athena, and Schliemann accepted Louisos' statement that it covered a tomb containing a bronze dagger, a flute inscribed ἱαρος[4] a late coin of Aigeion, and a skull[5] in a good state of preservation.

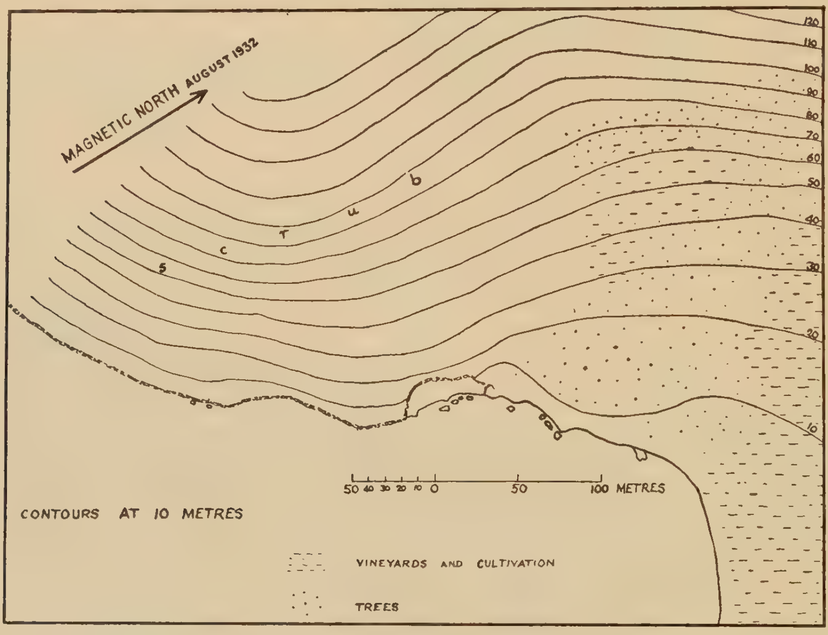
MAGNETIC NORTH AUGUST 1932
120
110
100
90
80
70
60
50
40
30
20
10
b
u
T
c
S
50 40 30 20 10 0 50 100 METRES
CONTOURS AT 10 METRES
VINEYARDS AND CULTIVATION
TREES

FIG. 2.—PLAN SHEWING CAVE AND ITS SURROUNDINGS. Scale, 1 : 5000.

I had several interviews with one of the workmen who took part in Louisos' excavation. Before the present excavation began he described the finding of a complete bronze tripod which had to be melted down to escape seizure, and the son of Mr. Metaxás, Schliemann's host, also saw such a tripod. In the place indicated by the workman as the find spot (in C.1. in Fig. 4) we found the stratification disturbed below sea level, a dated Roman graffito [1] and Corinthian and Mycenaean vases being found together.[2] There were also considerable fragments of a bronze tripod-cauldron. The workman further described the discovery of a construction above sea-level, the stones [3] of which Louisos incorporated in his verandah. Some of them are still there, others are in the possession of his widow.

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[1] *Ithaka, der Peloponnes und Troja*, 44 ff.

[2] *I.G.* IX. 1, 653.

[3] Through the kind offices of Mr. K. Petalás, Mayor of Vathý.

[4] *Ibid.* 655. Actually, of course, these were just the miscellaneous finds in Louisos' hands at the moment.

[5] I found a skull carefully buried by itself in the disturbed earth of B under half a pithos.

The second excavation was conducted by Professor Vollgraff in 1904.[4] The outline of his trench was plainly visible when we started (Fig. 4, plan and section).[5] His most important finds at Pólis were the five Mycenaean sherds which established the existence of Mycenaean pottery in Ithaca.

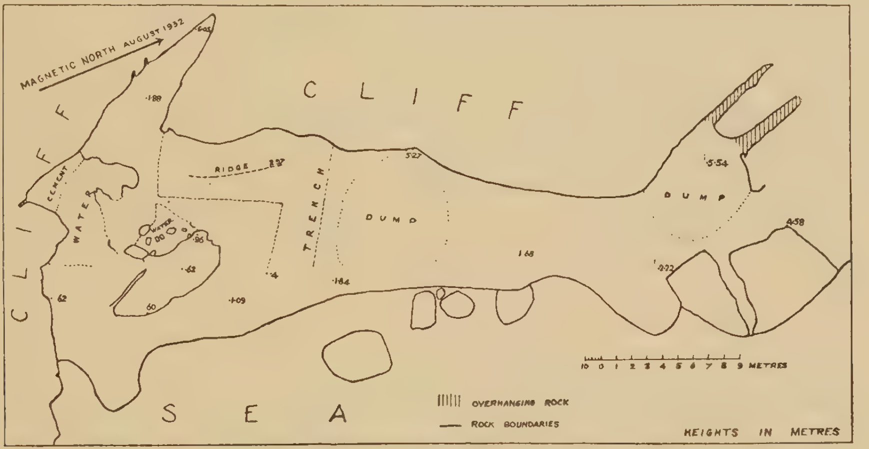
MAGNETIC NORTH AUGUST 1932
CLIFF
CLIFF
CLIFF
6·05
·1·88
RIDGE 2·37
5·27
CEMENT
WATER
WATER
TRENCH
DUMP
DUMP
5·54
4·58
·96
·62
·4
·1·84
1·68
2·72
62
60
·1·09
SEA
10 0 1 2 3 4 5 6 7 8 9 METRES
OVERHANGING ROCK
ROCK BOUNDARIES
HEIGHTS IN METRES

FIG. 3.—PLAN OF THE SITE. Scale, 1 : 500.

The excavation here described is thus the third on the site. In 1930 removal of the top-soil revealed a stratum of boulders, many of which were removed by blasting the following year; but on the outer edge of the excavation there still remains a thin, curving slab of rock. On the under side of this there appeared in some places a grimy deposit and stalactitic [6] formations, suggesting the inside of a cave. The size and thinness of this slab made it unlikely that it can have fallen far without being more broken, and so, judging by its nature and position, it must have formed a low part of the cave near the entrance. The formation and collapse of the cave are explained by the structure of the hillside; this is composed of beds of limestone, probably travertine deposited by flows of volcanic water, dipping at the same angle as the slope of the land (Fig. 2) interbedded with volcanic ash and agglomerate. The latter formations, being here less resistant than the limestone, are an element of weakness, easily eroded to form a cave, and they have caused similar gashes on the opposite side of the bay and elsewhere in Ithaca.

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[1] *I.L.N.* 6 Dec. 1930.

[2] The only other place where Hellenistic or later pottery was found below sea-level was in D, under an enormous rock which had evidently confused the stratification.

[3] These were of very neatly-cut sandstone. Three of them measured respectively 50 × 46 × 7 cm. (groove on three sides), 68 × 65 × 7 cm., 65 × 65 × 7 cm.

[4] *B.C.H.* 1905, 145 ff.

[5] These drawings are by Mr. C. A. R. Radford.

[6] The geological observations and the two general plans (Figs. 2, 3) are by Mrs. G. A. D. Tait.

In 1931 C.1 and B.1 were cleared of boulders, but as soon as excavation began, water poured in from the fissures in the porous cliff. It was evident that we were dealing with a stratified site, as more than thirty Mycenaean vases could be reconstructed from C.1, and a good many complete Corinthian vases were found in B.1. In 1932 I had the assistance of Mr. G. A. D. Tait and later of Mr. C. A. R. Radford. With the aid of a pump and dams we succeeded in continuing the excavation and in examining the stratification. Fig. 5 shews two sides of our dams, Fig. 6 fragments of tripods *in situ*, and water pouring past them to the pump from which it was drained.

## STRUCTURAL FEATURES BELOW SEA-LEVEL[1] (Fig. 4)

The principal structure on the site is a low wall which ran in a curve from the face of the rock on the west side of the cave to the gravel bank which formed the east side. Near the centre was an external projection 2·10 m. long and 0·60 m. wide, forming a step in front of the entrance through the wall to the higher level within. The base of the foundation was carried down into the accumulated layers of débris to a depth of *ca.* 1·10 m. below datum.[2] The top of an upper step at the entrance was 0·15 m. below datum, and this was the level of the ground immediately within the wall. Outside the wall the ground level was about 0·80 m. below datum at the base of the steps. The top step had been preserved by a large rock with a flat lower surface, which had fallen onto the step. Between it and the rock there was only a thin accumulation of mud (about 0·10 m. thick), which had washed in after the rock had fallen. Elsewhere the wall nowhere stood above 0·20 m. below datum, while the top of the lower step lay at 0·50 m. below datum. The construction of the wall, with the outer stones bedded horizontally and the inner face on edge, suggests that it was not intended to carry a wall of any great height. The latest sherds found in the foundation trench directly below the wall belong to the end of the fourth century and must antedate the wall.

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[1] For this and the following paragraphs on the stratification below datum Mr. Radford is responsible.

[2] Datum is the point to which the highest tides rose, marked on the cliff face at point X (Fig. 4, plan); all levels are measured from this.

The second structure was a rough pavement at 0·80 m. below datum (Y on Fig. 4). This was built of irregular undressed stones set in clay.

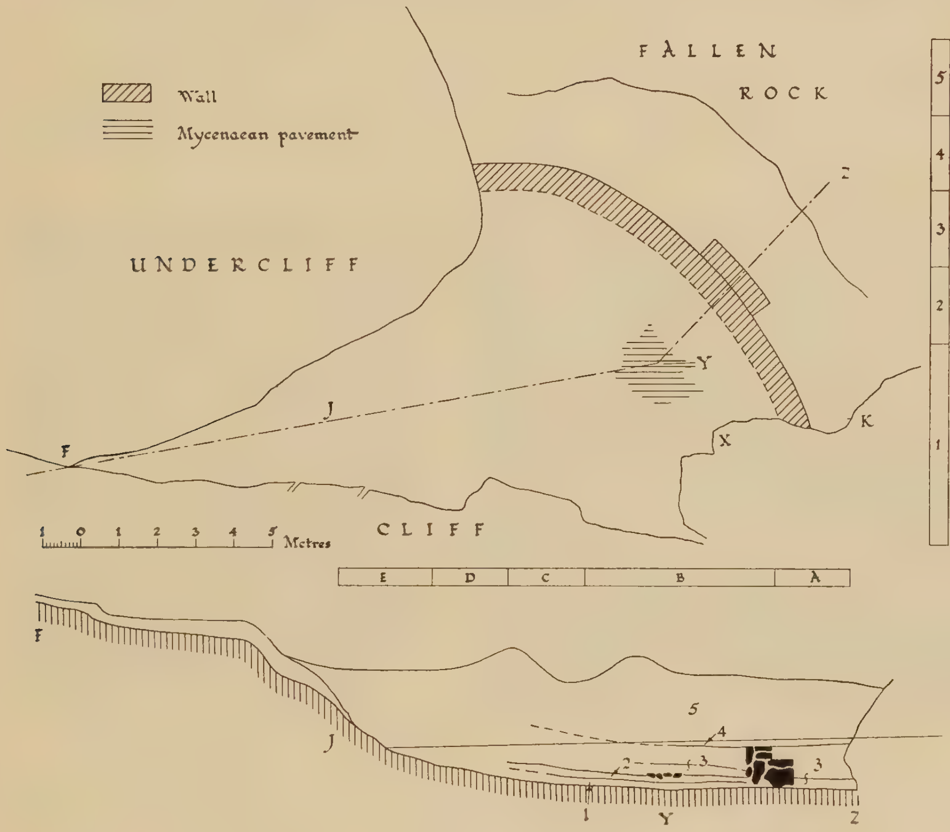

FIG. 4.—PLAN AND SECTION OF THE EXCAVATED AREA.

It lay inside the wall and in the Mycenaean deposit. In no direction was it finished with a regular face, and it seems to have extended beyond the area indicated on the plan, which represents the measurements we were able to take when the character of the structure was ascertained.

## DESCRIPTION OF THE STRATIFICATION

### A. WITHIN THE RETAINING WALL ALONG THE LINE FYZ

The natural soil consisted of a reddish gravel, lying on the rock, which in places probably formed the cave floor. The natural surface sloped downwards from the back of the cave towards the sea.

1. Gravel with small stones and traces of a black deposit. Where it could be carefully examined, this layer contained only rude pottery of early bronze age type and no Mycenaean or other painted wares. It appeared as a thin deposit overlying the natural soil.

2. A yellow, rather stiff clay, mixed with small stones and occupation débris. This contained Mycenaean pottery but no recognizable Protocorinthian or later wares. It overlay the previous deposit wherever we could test the stratification. The rough pavement at 0·80 m. below datum consisted of irregular, undressed stones set into this clay, with a rough surface some 0·10 m. higher.

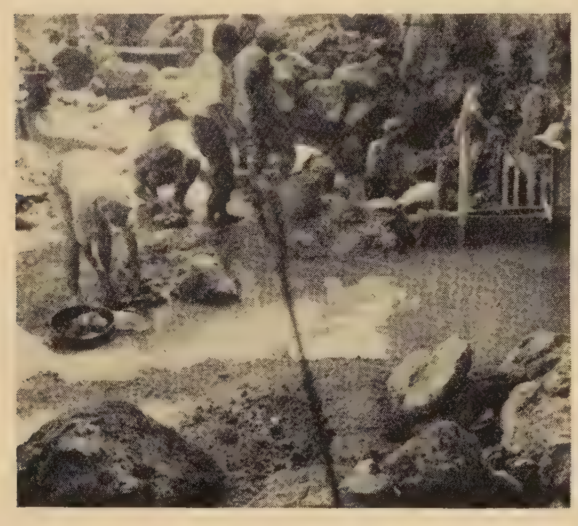

FIG. 5.—THE EXCAVATION, 1932.

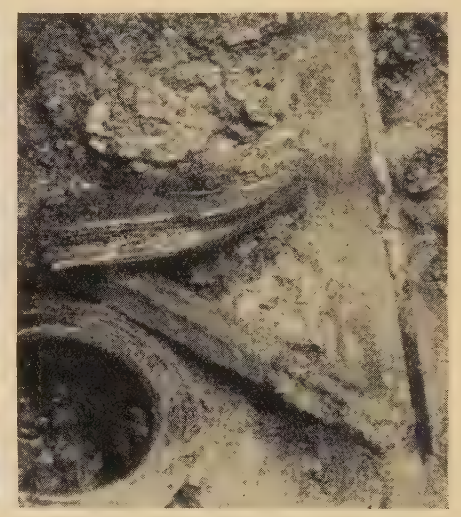

FIG. 6.—TRIPODS *in situ.*

3. A mixture of rubbish, clay, gravel and stone, which contained pottery dating from Geometric times to the fourth century, and many fragments of bronze tripods. This layer extended over most of the area inside the wall. At several points immediately behind the wall there were traces of a stone pavement at a level of about 0·10 m. below sea-level, elsewhere there were traces of a spread of reddish gravel at this level. These traces nowhere extended more than 2 m. from the inner side of the wall. They may represent a pavement contemporary with the building of the wall, while the material immediately below this is the filling used to level up the site. It is, however, clear that the lower part of this stratum represents the accumulation of débris which took place during the early Greek period. At one or two places near the back of the wall there were traces of floor-level between the top of the Mycenaean stratum and the pavement level, contemporary with the erection of the wall, a thin layer of pebbles at about 0·60 m. below datum. Allowing for the natural slope of the ground,

this would very well suit the level of the pavement outside the retaining wall, and attributed to the sixth century (see below).

4. A sooty deposit from 0·03 to 0·05 m. deep, was observed in C3, in C2, in B, and round the big rock south of D.

5. Upon, and sometimes, in this lay the remains of the fallen cave.[1]

### B. OUTSIDE THE RETAINING WALL

Natural soil as above.

1–2. The prehistoric levels were not found outside the wall.

3. Similar to the corresponding level inside the wall except that it lay directly on natural soil. At 0·80 m. below datum there were traces of a small pavement on which Corinthian aryballoi were resting. This may represent a sixth-century floor, but the stratification was here disturbed by the retaining wall, under which fourth-century vases were found on natural soil. A thick deposit of ash was packed against the outer face of the retaining wall. On either side of the entrance, where it reached a depth of 0·50 m., it contained two tripods (nos. 6 and 9), which may once have stood one on each side of the steps. Tripods 3 and 7 lay across the wrecked temenos wall; it was impossible to ascertain their relation to the black deposit (see below) that overlay the wall, and they may have been still standing in position at the top of the wall when the roof fell in.

4. The black layer lay evenly in C.3, over and outside the wall, and extended below the slab of rock. It is the kind of deposit which forms on the floors of caves, and must have accumulated in Hellenistic and Roman times. As it was entirely free from sherds, the sea was probably already encroaching [2] and making the front of the cave uninhabitable.

5. The curved slab of rock lay directly on this layer in some places, in others the sea had washed in pebbles and mud.

It is worth noting that the earliest sherds, belonging to the Early Bronze Age, were found at 1·40 m. below sea-level.

There is a local belief that part of the cave lies buried beneath the undercliff, but traces of occupation come to an end before the undercliff on the north is reached. All the holes in the cliffs round about have been examined with negative results (Fig. 3). A small quantity of Middle Bronze Age pottery, including a wish-bone [3] handle was found in a trench called P, first hole, near the north corner of the bay.

## History of the Site

### *Early Bronze Age.*

The stratification shews a pre-Mycenaean occupation of the cave, but not much of this area could be examined separately. The part tested contained sherds from pithoi of Early Helladic fabric, but similar sherds are also associated with the Mycenaean layer above. The most specific find from the layer is, therefore, the handle of an incised tankard,[1] to be dated at the end of the Early Bronze Age. A considerable amount of unlevigated Early Bronze Age pottery was found at the depth of the layer, and also in other parts of the site. One painted sherd may be of neolithic date. Some peculiarities [2] may indicate contacts with more northerly regions.

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[1] See p. 47 above. [2] Cf. *B.S.A.* xxxiii 19–20. [3] Cf. *B.S.A.* xxvii, Pl. III *a*, *b*, 7.

### *Middle Bronze Age.*

No occupation layer could be identified with this period, but there are fragments of about fifteen vases of Minyan and matt-painted pottery from various parts of the site. Several other fragments can be attributed to the Middle Bronze Age on the evidence of pottery from a site at Astakós in Akarnania.

### *Mycenaean Period.*

No stratigraphic divisions could be distinguished in this period. There are not more than one or two sherds of L.H. III *a* pottery, but there is a great deal of L.H. III *b* and L.H. III *c* [3] pottery. A few L.H. III *b* vases may have been imported, but nearly all the rest were probably made locally.[4] Human bones were found in the deposit, but it was not possible to observe their disposition. The paved area [5] suggests that the deposit may be votive, and a later inscription to Odysseus [6] makes it reasonable to connect the chain of offerings at the shrine with him.[7]

### *Protogeometric to Geometric.*

Dedications in Protogeometric times are very few, and there may have been a break in the occupation here; but in the Geometric age the popularity of the shrine at Aetos did not prevent offerings being made at Pólis. Bits of perhaps one hundred Geometric vases have been found, though they cannot compare with the deposit at Aetos in interest and variety. The most imposing dedications of this period are the bronze tripod-cauldrons (see Pls. 10–17, Figs. 14–17). For the first time it is possible to reconstruct a complete tripod with certainty (No. 9 in the catalogue of bronzes, Fig. 17). There are pieces of at least twelve tripods, many of them very beautiful. There is also a handle which cannot be mated with a leg, and there is the tripod said to have been found by Louísos. How can we account for the presence of all these elaborate tripods in a little sea-side shrine? I suggest that they may be dedications to Odysseus, possibly by victors at the Odysseia,[1] like the tripods found at Olympia, Argos, Delphi and Delos.[2] Their existence would have been enough to account for Homer's story that Odysseus brought thirteen tripods with him from Phaiacia, and hid them in a cave near his landing-place on Ithaca.[3] The fact that one of the tripods (No. 3, Pl. 11*a*, Fig. 15) was on wheels provides a further link with Homer.[4] The description of the tripods in the Odyssey and Iliad can hardly have been derived from the earliest traditional form of the poems, since the earliest known ornamental tripod-lebes is protogeometric.[5]

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[1] Cf. Dörpfeld, *Alt Olympia* Pl. 22 nos. 3, 7.

[2] These will be discussed later.

[3] See *B.S.A.* xxxii, 222.

[4] The clay of modern tiles made at Pélos, further North along this coast, is not dissimilar.

[5] See p. 50 above.

[6] See p. 54 below and Fig. 7.

[7] Plutarch (*Quaestiones Graecae* 14) states that yearly sin-offerings were paid by the relations of the suitors to Odysseus, but that the payment was later transferred to Telemachos. The tale has a respectable source (Arist. Ἰθ. Πολ.), and such dues would no doubt have been paid at this shrine.

A terracotta geometric sphinx belongs to this period. She must have stood at least 0·50 m. high and is, I believe, unique in Greece. A decided turn of head, body and shoulders may mean that she is one of a pair.

There are indications of influence from East Greece during this period, and Mr. M. Robertson tells me that this observation is confirmed by evidence at Aetós.

### *Protocorinthian and Corinthian*, 700–550 B.C.

Traces of pavement inside the wall at 0·60 m. below sea level and outside at 0·80 m. may be connected with this period. In the seventh century, dedications continue in a thin stream till the last quarter, when there is a spate of Corinthian vases, which continues till the middle of the sixth century. One plate and a kotyle were valuable objects, the rest are small, cheap little vases, but there is a great number of them. An interesting lid and fragments of perhaps a dozen other Rhodian vases continue the Rhodian connection and there is one vase which Payne thought Laconian.

### *Sixth to Fourth Century* B.C.

In the sixth century, Attic vases begin to be imported and continue, at any rate, till the end of the fourth century. There is a good deal of black glaze pottery found mostly under or round the wall. The best works of art of this period are the terracottas. A local industry seems to have sprung up in the sixth century and to have continued until the Roman period. No doubt foreign imports assisted its development. There is one terracotta from Rhodes, besides a beautiful Corinthian sphinx. In the fifth century there is a pleasant relief of Paris and the goddesses. Masks begin to be dedicated in the full sixth century, and they are a flourishing industry from the fifth century until Hellenistic times. An ivory statuette of the resting Herakles must be dated after Myron's Herakles, but it is uncertain how long after.

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[1] The evidence for games in Ithaca is given on p. 54 below.

[2] See *Evolution*, p. 114 below.

[3] *Od.* viii 390–1, xiii 13–4 and 362 ff.

[4] *Il.* xviii 373 ff. Hephaistos worked also for the Phaiacians, see *Od.* vii 92.

[5] *A.A.* 1935, 286 Fig. 15. See *Evolution*, p. 101 below.

### *Third Century* B.C. *to First Century* A.D.

The foundation of the wall is to be dated not earlier than 300 B.C., and marks a reconstruction of the sanctuary. It cut through an earlier deposit, and must have carried a wall[1] defining the temenos. Offerings dating from Hellenistic to Roman times were found at the back of the cave and at a higher level, perhaps on account of a rise of sea-level.

There is a certain amount of 'West slope'[2] ware and a good many 'Megarian' bowls. A 'West slope' plate, dated by Mr. H. Thompson to the last quarter of the third century, is our earliest inscribed dedication to the nymphs, and there are two others. Some terracotta reliefs can also be connected with the nymphs, and it is possible to regard a 'cave relief' as a picture of the renovated sanctuary.[3] There are some fragments of about a hundred female masks[4] shewing some development of type; they are evidently local products, and may be provisionally dated from the second to the first century B.C. On one of these (Fig. 7) is scratched εὐχὴν Ὀδυσσεῖ, and in another direction [ὁ δεῖνα ἀνέθ]η[κε]ν; "Votive offering to Odysseus, so and so dedicated it."[5]

The masks denote a period of popularity of the shrine, and an indirect commentary is supplied by the Magnesian inscription[6] which records the answer of the Ithacesians to an invitation to the games of Artemis Leukophryene instituted in 206 B.C.[7] They invite the Magnesians to their games, the Odysseia, and order that the inscription be set up in the Odysseion,[8] perhaps this very shrine, the games[9] no doubt being held in the small plain outside.

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[1] See p. 48 above.

[2] See Thompson, *Hesperia* iii 438.

[3] Cf. the marble reliefs from Vári (*A.J.A.* 1903, Pls. iii–viii).

[4] See Vollgraff, *B.C.H.* 1905, 148, Fig. 11; 149, Fig. 12. Discussed in the catalogue of terra-cottas.

[5] Prof. M. N. Tod tells me that the form of the letters suits the date attributed to the masks. He also suggested this translation.

[6] O. Kern, *Inschriften von Magnesia am Mäander* no. 36.

[7] *Op. cit.* p. 13.

[8] The place of assembly from which this inscription is dated was called the Odysseion (line 1.2), but we do not know if it is the same shrine, or if there was a separate building.

[9] Ithaca is a possible provenience for a victory dedication on a disc in the British Museum belonging to the sixth century (*I.G.* IX, 1, 649; better, *B.M. Inscr.* 952). It must come from one of the four islands and Kephallenia is excluded by the use of M for san (see *I.G.*, IX, 1, 610). Homer calls the Ithacesians Kephallenians (*Il.* ii 631), and as far as our knowledge goes, this inscription would suit the alphabet of Ithaca. See *I.G.* ix 1653, and vase inscriptions at Aetós to be published by Mr. Robertson.

After the Megarian bowls the dedications become fewer, but a tourist like Epaphroditos[1] still found it worth while to visit the shrine. Four sherds may be imported Arretine. Finds die out towards the end of the first century A.D., except for a few doubtful scraps. After this date earthquake or disintegration brought about the fall of the cave.

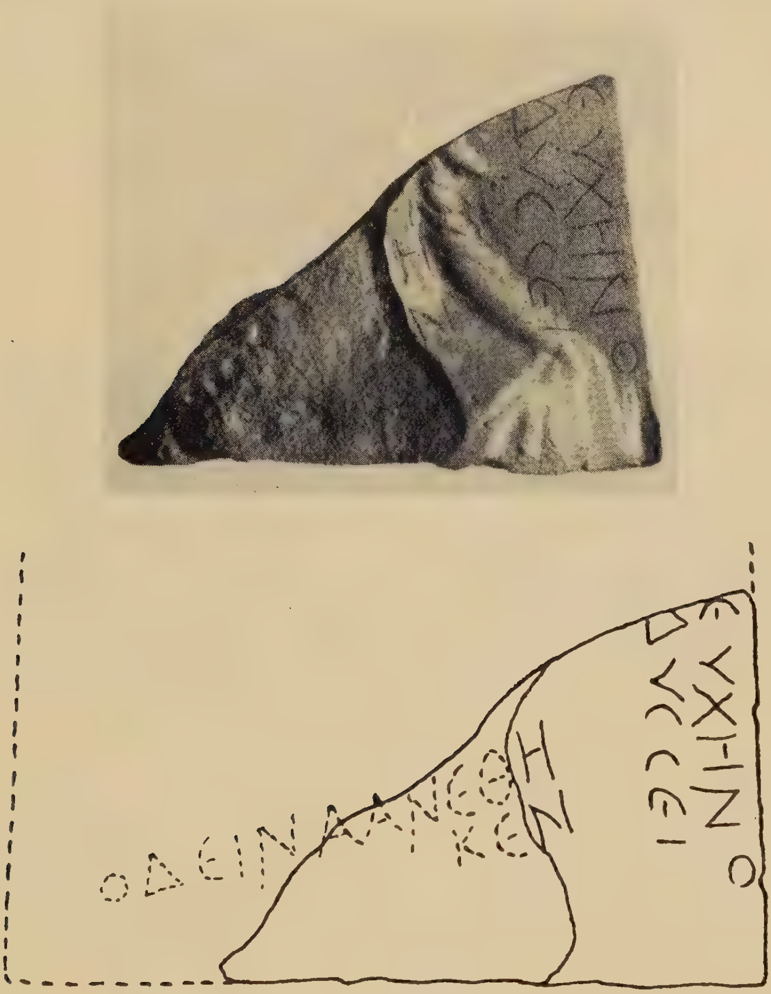

FIG. 7.—INSCRIBED MASK. Scale, 1 : 1.

Some human bones in the upper layers of the site may be attributed to burials made after the abandonment of the sanctuary.

There is evidence for the worship of the following deities at this small but crowded shrine: the names of Athena and Hera can be read on the seventh-century inscription found by Louísos;[1] there are inscriptions to the nymphs and nymph-reliefs; about thirty small masks represent Artemis with bow and quiver; lastly, on a female mask, there is the dedication to Odysseus.[2]

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[1] See *I.L.N.* 6 Dec. 1930.

The shrine at Pólis was of at least local importance in Mycenaean, Geometric, archaic and Hellenistic times, and it is reasonable to connect this importance with the Odyssey.

## CATALOGUE OF METAL OBJECTS

### I. BRONZE GEOMETRIC TRIPOD-CAULDRONS

*Classification.*

Furtwängler's classification of the tripod-cauldrons found at Olympia[3] is chiefly based on their decoration. A revised classification has now become necessary, for a tripod found at Ithaca (no. 3, see p. 58 below) combines characteristics of Furtwängler's classes I and III. Therefore his class III is to be derived from class I, and not from class II, which is shewn by the style of its figurines to be later than his class III. I have attempted a revised classification,[4] with the aid of the new evidence, for at Ithaca several handles were associated with legs. It is chiefly based on the section and size of legs and handles, and on the style of the figurines attached to them. It may be summarized as follows:

The series begins with small, simple tripods, (*e.g. Ithaca* nos. 1, 2; Pl. 10, Fig. 14) which resemble a Mycenaean tripod[5] found at Mycenae in 1876 and two Protogeometric clay tripods[6] at Athens. It continues with tripods at Olympia and Delphi which differ from *Ithaca* nos. 1, 2 only in being larger. It ends with tripods which have large ornate legs, with a double T section and ornamented with panels (*Ithaca* no. 11; Pl. 17). These are accompanied by handles with a flat section and light open-work decoration (*e.g. Olympia* no. 641). Other tripod legs and handles have been arranged in the series according to their size and section and to the style of their decoration. The dates suggested are conjectural.

*Cast Tripod-Cauldrons Class* 1, 1000–800 B.C.

Low tripods like *Ithaca* no. 1, and larger tripods of the same type. Legs with simple sections, handles with round sections. At the end of the period flat handles are found. *Ithaca* nos. 1–6 (Fig. 19). This class corresponds to Furtwängler's class I.

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[1] See p. 46 above.
[2] See p. 54 above.
[3] *Olympia* IV 75 ff.
[4] I have dealt with this subject in greater detail in *Evolution*, pp. 79 ff. below.
[5] Found by Schliemann. Stais Δελτ. 1916, παράρτημα, 82: below, pp. 76, 77, Fig. 1*a*.
[6] *A.A.* 1935, 286, Fig. 15: below, p. 77, Fig. 1*b*.

*Cast Tripod-Cauldrons, Class* 2. 800–750 B.C.

Legs with spreading and complex sections, handles with flat sections. *Ithaca* nos. 7–9 (Figs. 16, 17, 19).

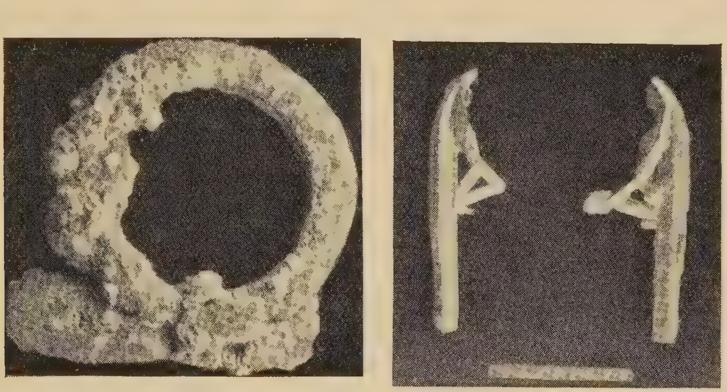
*Cast Tripod-Cauldrons, Class* 3. 775–725 B.C.

Legs with hollow rectangular or double T sections, light flat handles. *Ithaca* nos. 10, 11 (Pls. 10*c*, 17*a*, *b*, Fig. 19).

Classes 2 and 3 correspond to Furtwängler's class III.

*Hammered Tripods.* 750–700 B.C.

Strips of thin bronze with chased patterns. *Ithaca* no. 14 (Pl. 17*c*). These correspond to Furtwängler's class II. They may not be tripod-cauldrons.



*a* *b* *c*

FIG. 8.—TRIPOD FRAGMENTS BEFORE CLEANING. *a*, *c*, No. 1; *b*, No. 2. Scale, *a*, 1 : 2; *b*, *c*, 1 : 7.

Tripod-cauldrons are closely connected with the national festivals, the figurines attached to them shew few traces of foreign influences, and no tripod-cauldron has yet been found outside Greece.

Diagrammatic reconstructions of the principal pieces will be found in Figs. 14–17[1]; sections of legs and handles in Fig. 19; sections of cauldron rims in Fig. 18 *a–c*.

(*a*) *Cast.*

1 (*a*). Pl. 10*c* and Fig. 8*c*. Height 0·2 m., width 0·027 m.[2] Complete leg with a plate, which has four rivets with caps. Two struts and a point.

1 (*b*). Pl. 10*a*, *b*; Fig. 8*a*. Diameter 0·074 m., width 0·11 m. Vertical ring-handle,[3] with a rectangular attachment-plate; rounded section broad below (Fig.

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[1] By Mr. P. de Jong.

[2] The measurements are taken from just below the struts.

[3] See Mr. Davies' chemical analysis, p. 73 below.

19); rope decoration. When found there was a lump of metal on the bottom of the handle (Fig. 8) which has since broken away, leaving a hole (Pl. 10*a*). This lump must have been constructional, and Mr. de Jong has reconstructed a loop on the analogy of the tripod from Mycenae reconstructed by Stais.[1]

1 (*c*). Fragment of cauldron rim 0·01 m. thick; triangular section, cf. sections of rims (Fig. 18). Position: C.2, 0·40–80 m. below datum.

*Reconstruction* (Fig. 14*b*). Diameter of cauldron 0·27 m., depth 0·135 m. These measurements are given by the curve of the leg plate. The unshaded parts are conjectural. The rivets shewn belong to the leg.

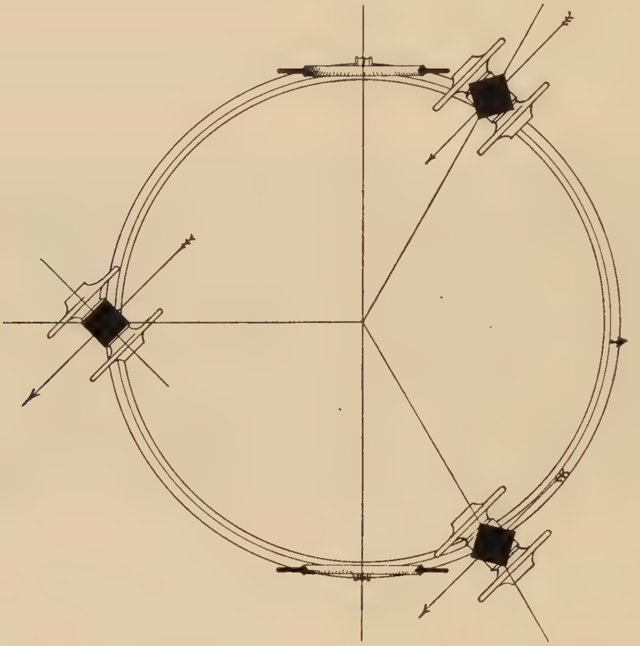

Fig. 9.—Diagrammatic Plan of Tripod, No. 3. Scale C, 1 : 10.

It is not certain that (*b*) belongs to (*a*). 1 (*a*) is so like 2 that they must have belonged to a pair of tripods, and it seems inevitable, as all three were found together, that the handle must have belonged to one or the other.[2]

2. Pl. 10*d* and Fig. 8*b*. Length preserved 0·21 m., width 0·03 m. Leg (end broken). Slightly more sturdy than 1 (*a*); rivets lost. Position: as no. 1.

*Reconstruction* (Fig. 14*a*). Handle supplied from Tripod 1. Diameter of cauldron, 0·28 m.; depth 0·14 m.

3 (*a*). Pls. 11, 14, 15, and Figs. 9, 15. Height 0·91 m. (with wheel, 3 (*d*) below, 0·96 m.), width at top, 0·04 m., at foot 0·05 m. Square section. The caps of the rivets are enormous, and there are layers of thin bronze between them and the

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[1] See pp. 56 above, 77 Fig. 1*a* below.

[2] For the loop cf. the Protogeometric tripod from the Kerameikos and the Stais tripod (see p. 56 above); for the general shape, Evans, *Prehistoric Tombs of Knossos* Fig. 38.

plate. This probably indicates a succession of new vessels, each leaving a skin behind. Three very tall struts, the last ending in a bull's head with slightly damaged horns and well-moulded eyes (Pl. 15*a*). Small lengths of applied wire from a tangential spiral decoration on the top of the leg (Pl. 14*d*). The leg expands below and is slightly twisted. It carries an iron rod which fits the hub of the small bronze wheel (*d*) (Pl. 14*e*, Fig. 10*b*).

3 (*b*). Pl. 13*a*. Diameter 0·215 m., width 0·036 m., width of strap 0·036 m., Vertical ring-handle, ornamented with four plain fillets. Narrow strap, two broken stays. At the top are two large rivet-holes with a break between them. To the right is a break which exactly fits the base of the man no. 15 (Pl. 16). He would, however, be standing on the slope of the handle, and Mr. P. de Jong hesitated to place him in this position. He has, however, put the horse, no. 16 (Pl. 15*d*, below) found with no. 15 in the reconstruction (Fig. 15).

3 (*c*). One piece of rim belongs to this tripod, perhaps also two others (Fig. 18*a*). Leg and handle were found still in position on the rim of the cauldron.

3 (*d*). Pl. 14*e* and Fig. 10*b*. Diameter 0·124 m., diameter of hub 0·032 m. Wheel [1] with an iron rod through the hub. It fits on to the rod which goes through 3 (*a*). Two of the four spokes have been mended.

Position: outside the temenos walls,[2] B.2, 0·40–0·85 m. below datum. Fig. 6 shews the handle and the top of the leg *in situ* and part of 7 (*a*. 1) appearing in between.

*Reconstruction* (Fig. 15). Diameter of cauldron 0·64 m., depth 0·275 m. The handle and leg were found attached. All the wheels must run on the same axis, so that the other two legs must have had a bigger twist than the one we have. The dark part of the plan on Fig. 9 shews the position of the legs at the foot. It will be clear from this plan that two handles opposite each other on the diameter of a cauldron must each be close to a leg. If three handles have to be accommodated, symmetry demands that they be arranged either on the top of the legs or exactly between them.[3] Wherever we have evidence, all extant tripod-cauldrons had two handles.

4. Fig. 10*a*. Height 0·14 m., width 0·042 m. Fragment at the foot of a large leg. In front was fastened a bronze bar,[4] in a hole made after casting. Its purpose may be to attach a lion's foot. Position: C.3, 1·20 m. below datum.

5. Fig. 10*c*. Height 0·099 m., width 0·034 m. Another fragment probably also from the foot of a leg. Solid section, ridge down the front. A bronze bar had been inserted behind, in a hole made after casting and fitted with a bronze wad. This tripod may have been repaired by bars set between the legs. Position: C.3, 0·80–1·20 m. below datum.

6 (*a*). Pl. 12*b* and Fig. 16*a*. Height 0·75 m., width 0·044 m. Complete leg, broken below the one strut. It was attached to the cauldron by five rivets. The top is decorated by fillets. Part of rim remains.

6 (*b*). Pls. 13*c*, 15*b*. Diameter 0·21 m., width 0·039 m., width of strap 0·045–0·042 m. Solid, vertical ring-handle, decorated by an irregular zig-zag. Above, a horse of a heavy cart-horse type, front legs separated, hind legs run together, long

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[1] A similar wheel fits a tripod-leg from Palaíkastro (Candia museum Nos. 848, 898; see Bosanquet, *B.S.A.* xi p. 307, No. 7; also below *Evolution* Pls. 19, 4 and 20, 5).

[2] See p. 56 above.

[3] Cf. Winnefeld, *Milet*, *Band* I, *Heft* ii 90, Pls. xix, xx.

[4] Cf. Candia museum no. 1336, from Palaikastro.

tail melting into the rim; bullet-eyes, open mouth, mane. Strap has a rivet at the foot. Plate had two stays, and two rivets. If the strap is set vertically, the horse is off the middle. There is, however, no mark on the rim to indicate a groom. Inside the rim at the foot three faint marks which fit the three legs of bull[1] no. 18 (Pl. 14*a*). The handle and leg were found together but not attached.

6 (*c*). Fig. 18*b*. Fragment of rim fitting the rivets at the top of the leg. Position: C.3, 0·60–0·80 m. below sea-level.

*Reconstruction* (Fig. 16*b*). Diameter of cauldron 0·56 m., depth 0·28 m.

7 (*a*). Pls. 11*b*, 12*a*, *c*, Fig. 11. Height 0·82 m., width 0·05 m. Complete leg with two struts. Front decorated with spirals between two fillets on either side.

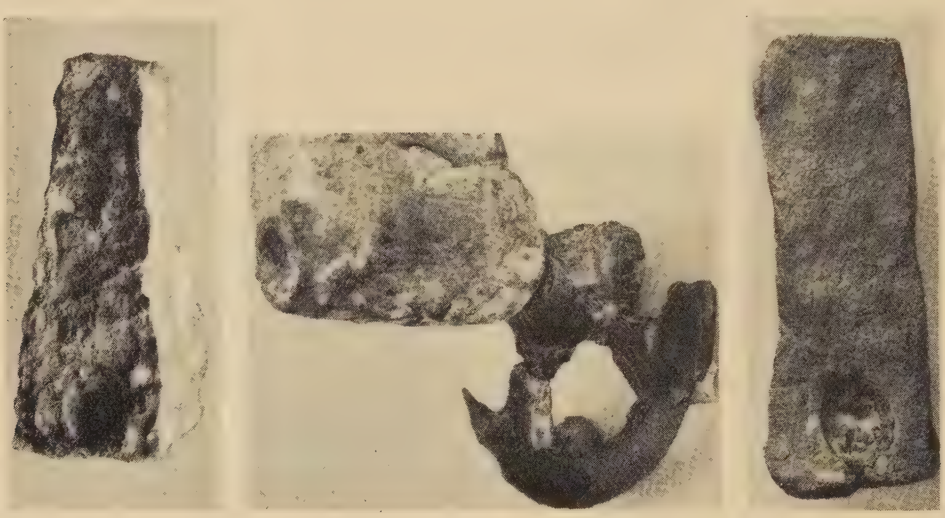
*a* *b* *c*

FIG. 10.—ENDS OF TRIPOD-LEGS. *a*, No. 4; *b*, No. 9; *c*, No. 5.
Scale: *a*, 1 : 2; *b*, 4 : 5; *c*, 2 : 3.

7 (*a*.1). Height 0·43 m. Foot of a leg. It shews that the bend on (*a*) is accidental. Position: B.2, 0·40–0·85 m. below datum.

7 (*b*). Pl. 12*a* and Fig. 11. Diameter 0·22 m., width 0·035 m. Upper half of a vertical handle.[2] Decoration, two pierced zig-zags between nicked, double fillets. Cast horse,[3] slimmer than that on no. 6. The mark on the rim in front of it (Fig. 11) suggests a groom, and the horse seems to be pulling back against the rein. Leg and handle found together. Position:[4] B.2, 0·20–0·60 m. below sea-level.

*Reconstruction* (Fig. 16*b*). Diameter of cauldron 0·58 m., depth 0·29 m.

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[1] On the inside of a handle at Delphi (*Delphes* no. 214) are the feet of an animal, probably a bull.

[2] See the chemical analysis, p. 73 below.

[3] For horses on this kind of handle cf. Ithaca no. 9 and *Olympia* no. 640 (that horse too pulls back).

[4] See p. 51 above.

8. Fig. 16*c*. Height 0·222 m.; another fragment which does not join, height 0·165 m., width 0·05 m. Leg, cruciform in section, front decorated with concentric spirals, each of which faces a zig-zag, all between fillets; three struts, last ends like No. 7. Position: C.2, 0·80–1·20 m. below datum.

*Reconstruction* [1] (Fig. 16*c*). Diameter of cauldron 0·70 m., depth 0·32 m.

9 (*a*). Pls. 11*c*, 12*d*, 14*c* and Fig. 17. Height 0·90 m., width 0·058 m. Complete leg, with two struts and an expanding end.[2] Spreading section. Attached to the cauldron by five conical-headed rivets; part of the rim still in position. The foot is damaged.

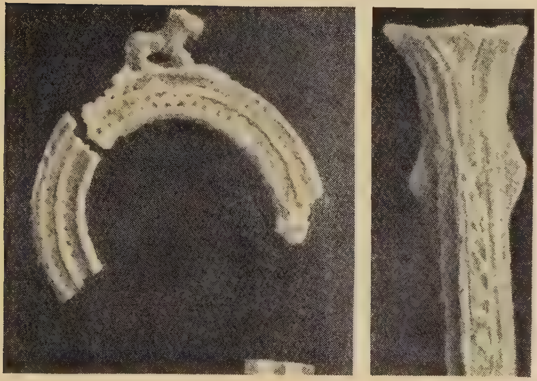

FIG. 11.—TRIPOD, NO. 7, BEFORE CLEANING. Scale, 1 : 6.

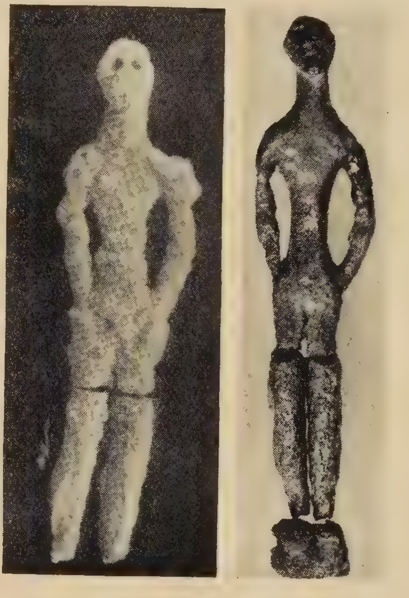

FIG. 12.—STATUETTE, NO. 15. Scale C, 1 : 2.

9 (*a*.1). Pl. 17*e*. Height 0·617 m. Rounded end and adjoining part of another leg. The last 4 cm. of the sides are undecorated.

9 (*a*.2–3). The tips of the other leg plates.[3]

9 (*b*). Pl. 13*b*, *d*. Diameter 0·24 m., width 0·04 m., width of strap 0·045 m. Vertical ring-handle, slightly larger than 7 (*b*), but similar. Horse slighter (Pl. 15*c*), better bred, features more clearly defined; open mouth; pulling back against the rein, well off the middle of the handle; cast with the handle, legs a solid block. Strap has three nicked, double fillets. Side struts in position. Plate fastened to the rim with two rivets. When found both handle and leg were attached to the rim (Pl. 14*c*). On the end of the strip of rim the rivet-hole of the next leg just shews. This gives one-third of the circumference, so that the reconstruction is

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[1] For the section cf. *Delphes* no. 219, *Olympia* no. 629, inv. 3895, 2096 in Berlin.

[2] This has been nicked so that it looks like a flower.

[3] See the chemical analysis, p. 73 below.

certain. In the other tripods the diameter deduced from the curve of the leg plate, checked by the curve of the handle-strap, is liable to an error of about 3 cm.

9 (*c*). Fig. 18*c* gives a section of the rim. Position: B.2, 0·30–0·70 m. below datum.

*Reconstruction* (Fig. 17). Diameter 0·668 m., depth 0·31 m. The extant part of rim is shaded. We have here reconstructed a groom, on the analogy of *Delphes* nos. 233, 234. He may have been as tall as the statuette *Delphes* no. 23, the later statuettes tending to be taller.

10. Pl. 10*e*. Height 0·166 m., width 0·07 m. Fragment of leg broken off below the struts. Double T section. In front ten grooves, on side four grooves. Position: C.2, 0·040–0·80 m. below datum.

11. Pl. 17*a*, *b*. Height 0·185 m., width 0·074 m. Piece of a panelled tripod-leg,[1] broken at the panel. Fragment of strut behind: panel [2] destroyed, zig-zag on each side of it. Position: C.2, 0·40–0·80 m. below datum.

12. Pl. 17*f*. Handle X. Diameter 0·216 m., width 0·042 m. Two worn and adjoining fragments of a vertical flat handle. Decoration, three notches. Position: C.3, 0·70–0·90 m. below datum.

13. Pl. 17*d*. Height 0·16 m., width 0·03 m., thickness 0·0075 m. Strip of bronze with a double curve. At the edge, nicked fillets; down the centre, stamped concentric circles. Uncertain use.[3] Rivet at one end. Position: C.3, 0–1 m. below datum.

13 (*a*). Length of plate 0·064 m., width 0·016 m., height of rivets 0·038 m. Three rivets on a plate, possibly belonging to a tripod of the Italian type.[4] Position: C.3, 0·20–0·70 m. below datum.

### (*b*) *Hammered.*

14. Pl. 17*c*. Height 0·22 m., width 0·042 m. Thin strip of hammered bronze, the end bent over. The original surface has disappeared except in one corner. It was chased with a double zig-zag at the edges; down the centre, ‘running dog.’ It may have been part of a hammered tripod, but lacks the tangential circles always present at Olympia. Position: C.3, 0·80–1·20 m. below datum.

## 2. BRONZE FIGURINES FROM TRIPODS

### (*a*). *Human.*

15. Pl. 16, Fig. 12. Height about 0·13 m. Bearded male. Legs broken above the knee, and at the ankles. The base belongs, but does not fit. It was wrapped round the edge of some object, and fits a hole in the handle of tripod no. 3. Contours much worn. The man is standing with feet together and hands down, a rare attitude among early statuettes.[5] He has a distinct twist of head and legs

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[1] See the chemical analysis, p. 73 below.

[2] Cf. *Delphes* nos. 241–243, Waldstein, *Argive Heraeum* no. 2221.

[3] Legs of Italian tripods and other furniture are made of somewhat similar strips, cf. Randall MacIver, *Villanovans and Early Etruscans*, pl. 21.

[4] *Memoirs of the American Academy in Rome* iii pl. 56, from the Bernardini tomb.

[5] Female figures with this attitude are Athens Nat. Mus. 15150 (De Ridder, *Acr.* no. 771) and the Dipylon ivories (Kunze *A.M.* 1930 pls. v–viii). The contours of *Ithaca* no. 15 may have been like those of another statuette from the Acropolis (no. 692 Zervos, *L'Art en Grèce*, nos. 69–72).

which would be explained if he were one of a group. He was found near the horse no. 16. Head, long; body and legs fairly well modelled; planes are rather flat. Breasts visible; enormous eye-sockets; mouth and nose indicated; ears rudimentary. The face turns upwards. He belongs to the purely Geometric period and probably to the late ninth century. Position: C.3, 0·70 m. below datum.

(*b*). *Horses.*

All the Pólis horses have certain characteristics in common—their legs stretch forward, they have long outstretched necks and thin barrels. The general effect is much more lively than most Olympian and Delphic horses. Perhaps they were all accompanied by grooms and pull back against the rein.

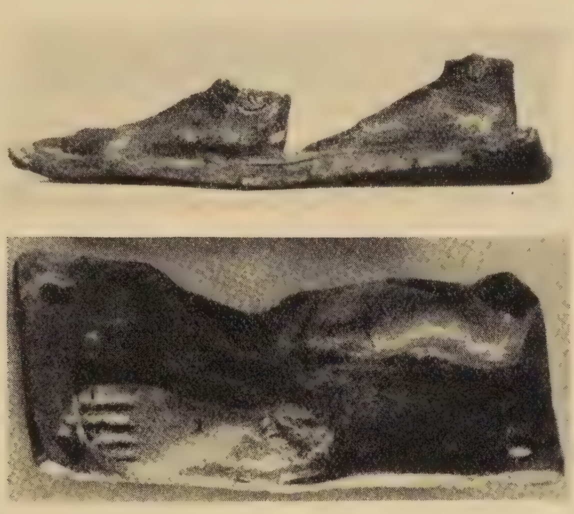

Fig. 13.—Statuette-Base, No. 20. Scale, 1 : 1.

16. Pl. 15*d*, below. Length 0·09 m., height 0·05 m. Legs and tail broken, surface of nose damaged. Neck abnormally long, nose thin and bent. A little modelling about the flanks. Nicks for the mane. A hole below the tail for the insertion of the genitals. His general style seems to be more primitive than that of the three horses on tripods nos. 6, 7, and 9, and he differs from them in having genitals and clearly divided legs. He was probably cast separately from the handle of tripod no. 3, and riveted and soldered on beside no. 15. Found with no. 15 and probably of the same date.

17. Pl. 15*d*, above. Length 0·085 m., height 0·06 m. Front legs and tail broken, back legs bent forward and broken above the hoofs. Usual attitude. The best developed of the Pólis horses. Barrel thin, but rounded; good crest, ears, eyes, mouth, nicked mane. Above the tail a round and pointed hole, probably for a bird on a stand.[1] Position: C.3, 0·80–1·20 m. below datum.

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[1] Cf. *Olympia* no. 216.

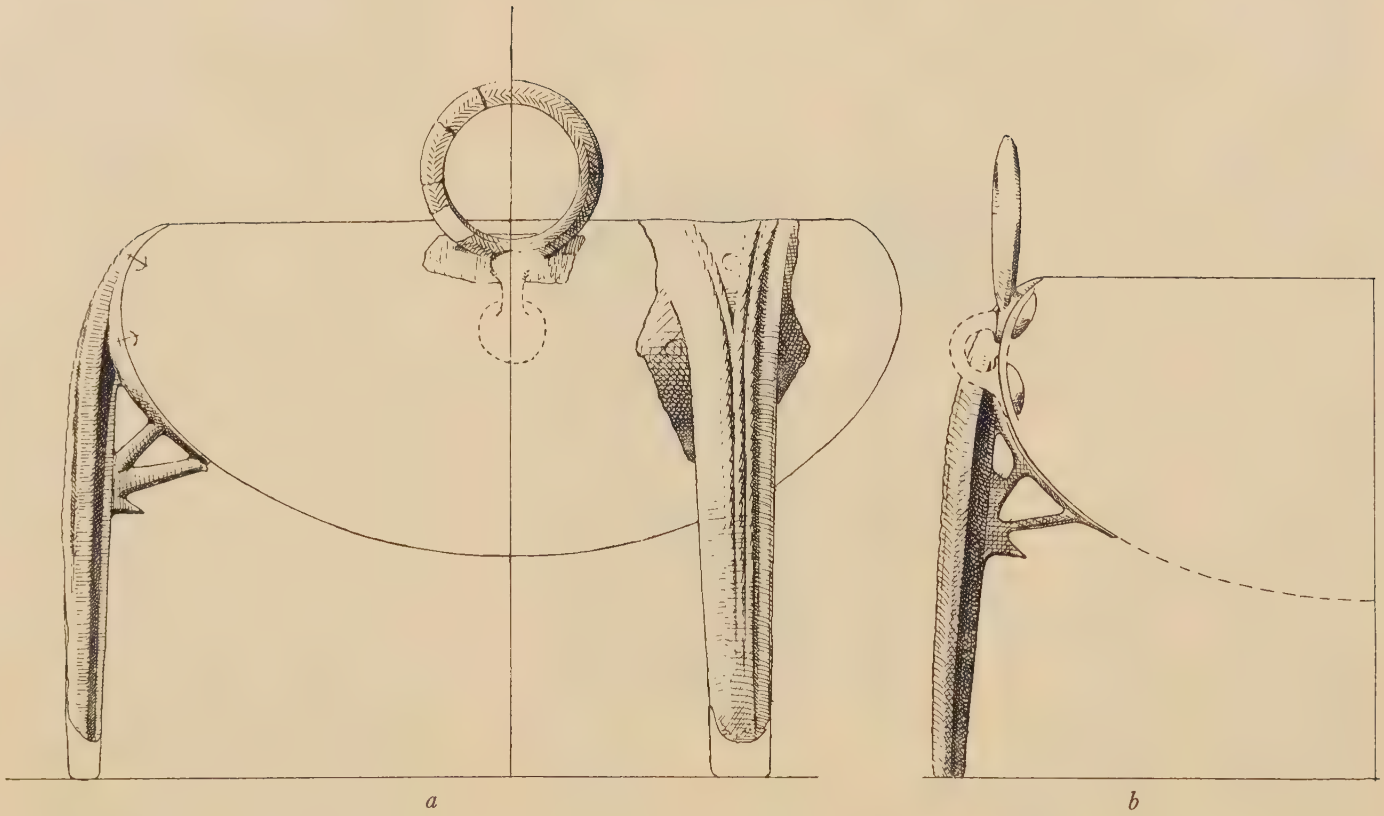

FIG. 14.—RECONSTRUCTION OF TRIPODS. *a*, No. 2; *b*, No. 1. Scale, 1 : 3.

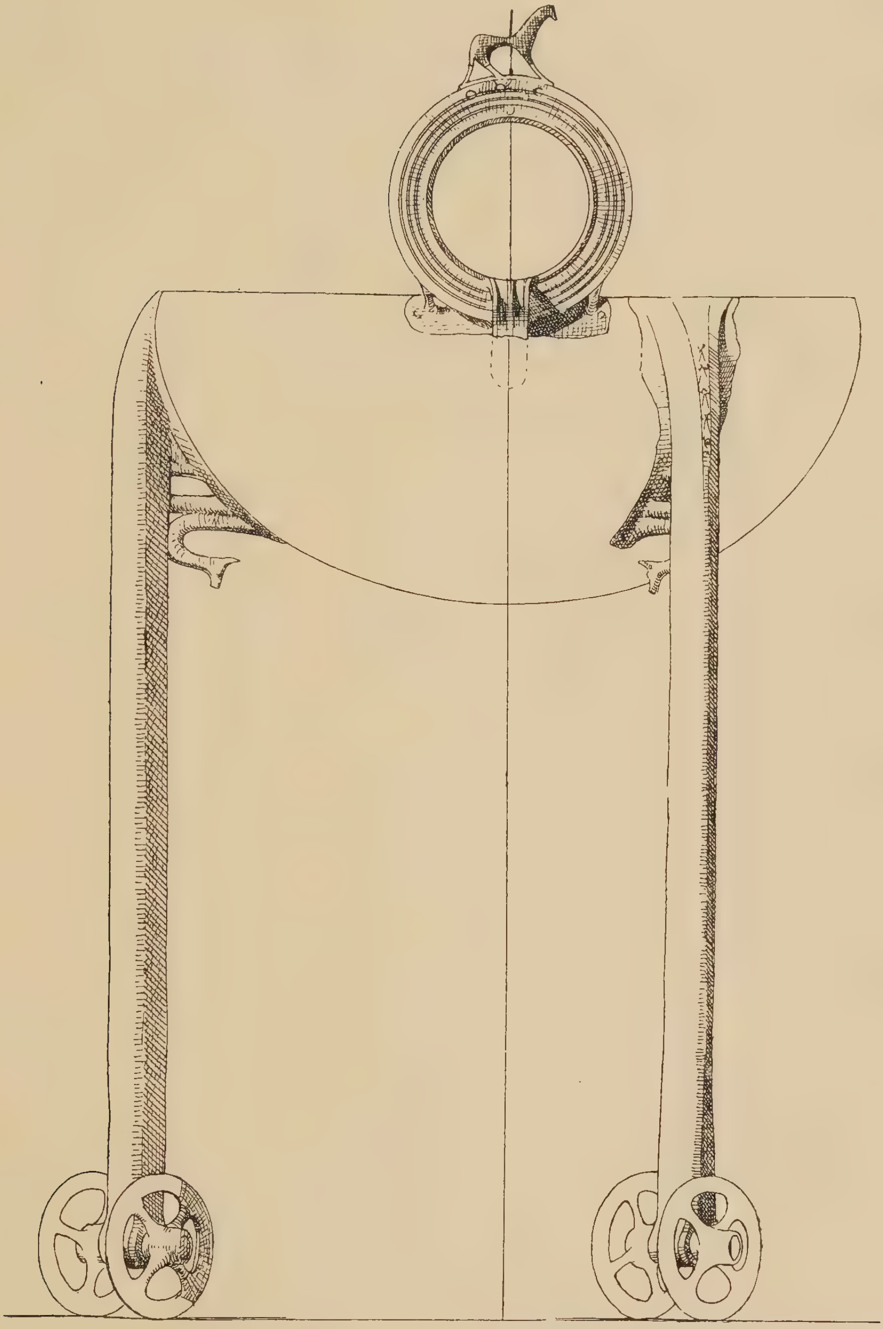

FIG. 15.—RECONSTRUCTION OF TRIPOD, NO. 3. Scale, 1 : 7.

(*c*). *Bull.*[1]

18. Pls. 13*c*, 14*a*. Length 0·053 m., height 0·028 m. (when found). One leg only is complete. The surface is much damaged, but is preserved on the muzzle and on the back of the head. The feet seem to coincide with faint marks on the inside of the handle 6 (*b*). Position: C.3, 1·20–1·30 m. below datum.

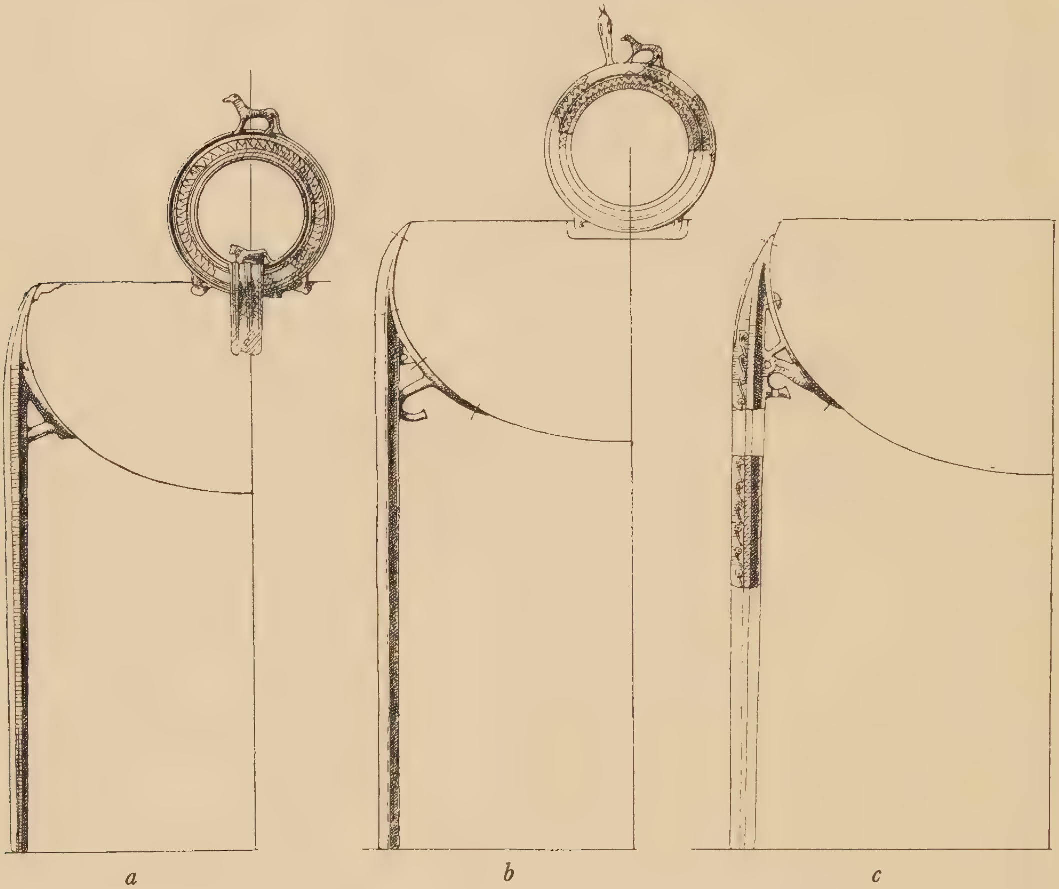

FIG. 16.—RECONSTRUCTION OF TRIPODS. *a*, No. 6; *b*, No. 7; *c*, No. 8. Scale, 1 : 10.

(*d*). *Pierced disk.*

19. Pl. 14*b*. Diameter 0·073 m., width 0·025 m. It may be the handle of a miniature[2] tripod, fixed upright by a rivet through the hole. Decorative holes like those of a handle in the Ashmolean Museum,[3] but larger. Position: from the wall in B.2.

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[1] Cf. *Delphes* no. 161, p. 52, and others; cf. also the hoofs inside handle, no. 214, p. 63.

[2] Cf. *Olympia* nos. 545, 576, 577.

[3] Published in *Evolution* below, p. 84 and Pl. 20, 1.

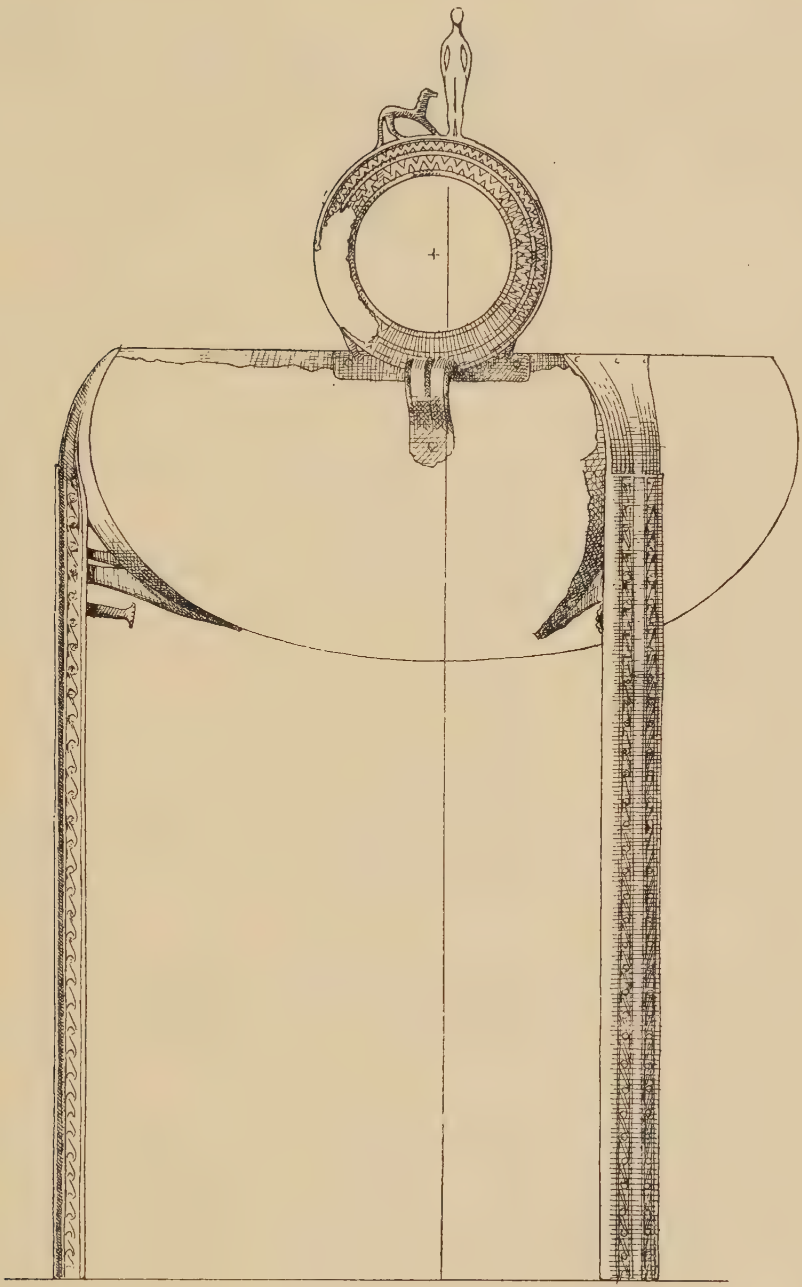

Fig. 17.—Reconstruction of Tripod, No. 9. Scale, 1 : 8.

(*e*). *Statuette.*

20. Fig. 13. Length 0·074 m., width 0·031 m. Base and feet of a statuette broken above the ankles, rivet-holes in the corners. The left foot is well advanced; both feet are quite flat on the ground, the weight evenly distributed between them; the toes are well defined and the little toe is nearly straight. The ankle-bones are denoted by incisions at uneven heights. Date, towards the middle of the sixth century. Position: C.3, 1·20 m. below datum.

### 3. BRONZE WEAPONS AND TOOLS

*Spear-heads* (cf. Fig. 20).

There are nine socketed spear-heads. They are brittle, and I have to depend on photographs taken hastily before cleaning. They were mostly found in C.3 and C.2 in a deposit which seems to be purely Hellenic, and none could be stratigraphically connected with the Mycenaean pottery. They all have closed sockets and are comparatively small.[1]

21. Total length 0·145 m., length of blade 0·10 m., width (originally) 0·034 m. Long thin blade. Position: C.3, 0·20–0·25 m. below datum.

22. Length 0·149 m., length of blade 0·092 m. (about 0·006 m. now lost), width 0·003 m. Position: as no. 21.

23. Length 0·105 m., length of blade 0·06 m., width 0·24 m. The most complete spear-head. Rivet-hole in the shaft. Shorter and deeper type. For a complete example see no. 5 of the collection of weapons said to be from Pólis (Fig. 20, p. 71 below). Position: C.2, 0·70 m. below datum.

24–29. Similar spear-heads.

*Helmets.*

There were fragments of helmets, with and without holes for lacing.

*Chisel* (cf. Fig. 20, 12).

30. Flat chisel. Length 0·126 m., width 0·047 m., thickness 0·008 m. End broken. The deposit in which it was found contained Mycenaean or earlier pottery. It is short and broad, *i.e.* of a mainland [2] type. Position: C.1, 1–1·10 m. below datum.

*Fibula.*

31. Fig. 18*e*. Length 0·162 m., height 0·051 m. Large arched fibula. Spring of two coils. Pin broken; small rectangular catch-plate, the end bent up. Arch, plain and round in section.[3] Position: C.3, 0·85–1·20 m. below datum.

*Vases.*

Fragments of a good many vases were found.

32. Three pieces of rim of a small bowl with a flaring lip. Position: C.2, 0–0·90 m. below datum.

33. Two pieces of a sharply everted rim, same position.

---

[1] Contrast those found at Móchlos and in the Shaft Graves (Evans *Shaft Graves and Bee-hive tombs of Mycenae* 39 Figs. 27–8).

[2] Cf. the chisels found in an E.H. deposit at Eútresis (Goldman *Excavations at Eutresis* Fig. 287).

[3] Cf. Blinkenberg, *Fibules grecques et orientales*, Types thessaliens, VI. 3f, from Lindos. This example and the others of class VI are all smaller than the Pólis fibula.

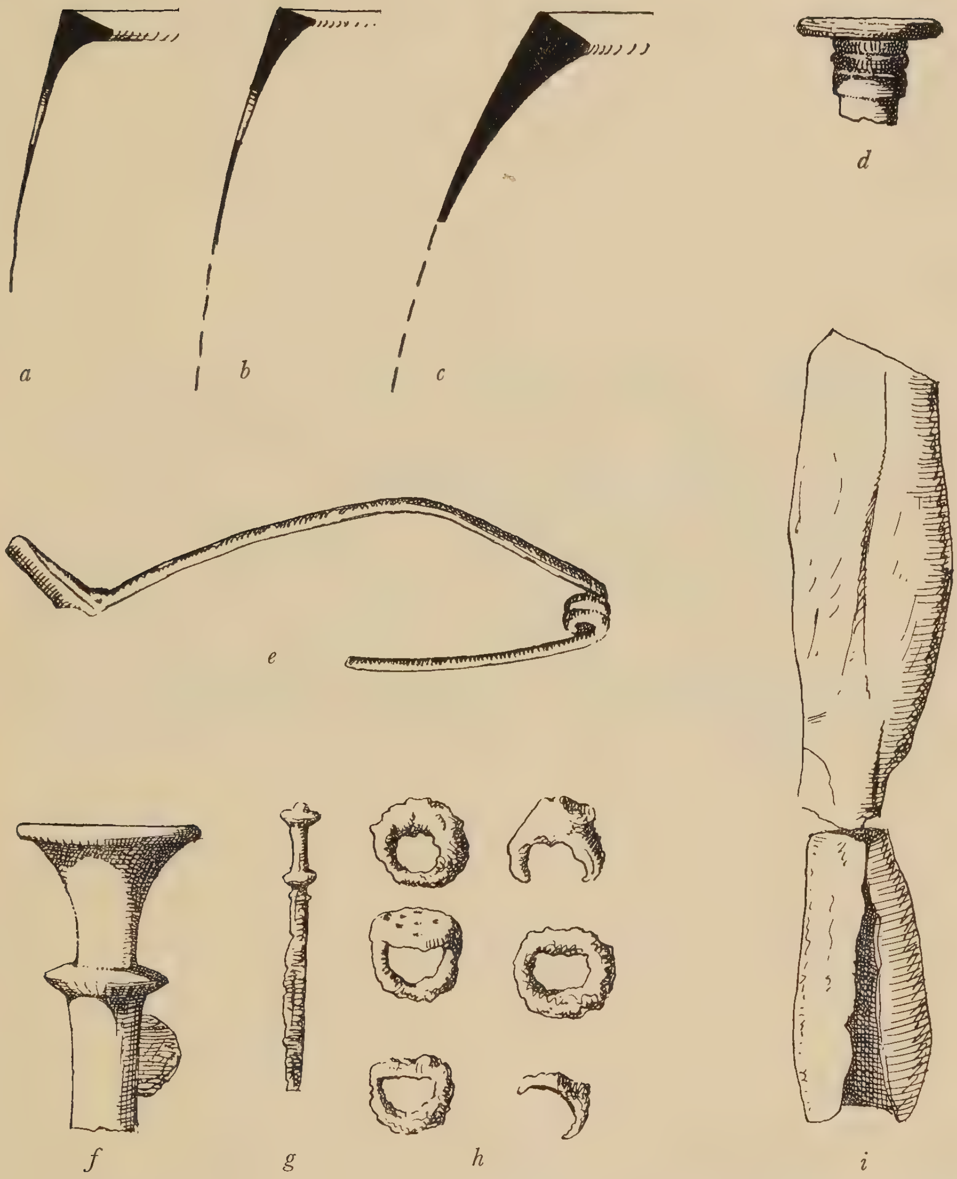

Fig. 18.—Bronze. *a–c*, Sections of Cauldron Rims; *a*, No. 3; *b*, No. 6; *c*, No. 9; *d*, Pin, No. 35; *e*, Fibula, No. 31; *f*, Knob, No. 36; Iron: *g*, Pin, No. 6; *h*, Rings, Nos. 7–12; *i*, Spear-head, No. 3.

Scale, *a–d*, *f*, 1 : 1; *e*, *g-h*, 1 : 2; *i*, 2 : 3.

*Pins.*

34. Length 0·019 m. Small pin. Broken below and perhaps above. Knob and three rings. Position: C.3, 0·20–0·25 m. below datum.

35. Fig. 18*d*. Length 0·013 m., diameter of head 0·02 m. Disk-headed pin.[1] Position: C.3 0·80 1·20 m. below datum.

*Knob.*

36. Fig. 18*f*. Length 0·043 m., diameter of shaft 0·001 m., of top, 0·026 m. Knob, use unknown. End of a bar going off to the right.

## OBJECTS OF IRON

*Swords.*

Fragments of the blades of two swords:

1. Length *ca.* 0·30 m., width 0·04 m., thickness 0·014 m. For the section cf. Fig. 21*a*.

2. Length *ca.* 0·15 m. Same type.

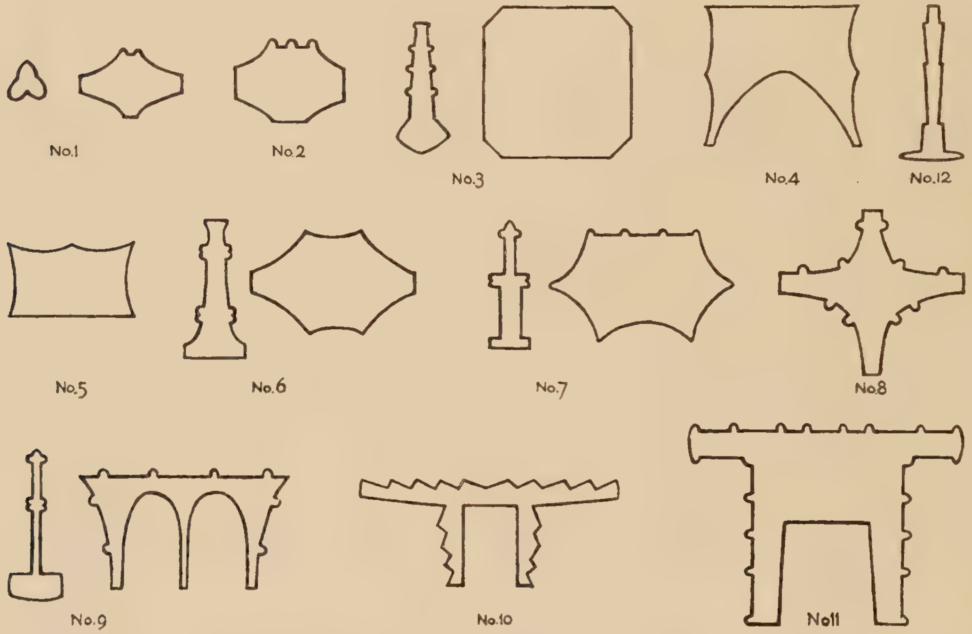

FIG. 19.—SECTIONS OF TRIPOD-LEGS. Scale, 1 : 2.

*Spears.*

3. Fig. 18*i*. Length 0·142 m., width 0·024 m. Spear-head with a split socket.[2] Broken at the neck and the point missing. Its outline resembles no. 21 above, but there is no mid-rib. Position: C.3, about 0·30 m. below datum.

---

[1] Cf. disk-headed pins at the Argive Heraeum. They are a good deal more ornate. Perhaps No. 604 is the nearest.

[2] Iron spear-heads with split sockets are common, *e.g.* *W.M.B.H.* vi 84, 91, from Sanskimost.

4. Length *ca.* 0·10 m., broken. Similar. It was found with an iron ferrule inside. Position: C.3, 0·70 0·90 m. below datum.

5. Length 0·02 m. and 1·10 m., width about ·022 m. Two bits of the shaft of a solid iron spear.

*Pin.*

6. Fig. 18*g*. Length *ca.* 0·08 m. Small knob above a disk [1] below, another knob. Shaft broken.

*Finger-rings.*

7–12. Fig. 18*h*. Finger-rings in bad condition.

13. 0·10 by 0·04 m. Double ring, perhaps for holding chariot reins. Position: C.3 0·70–0·09 m. below datum.

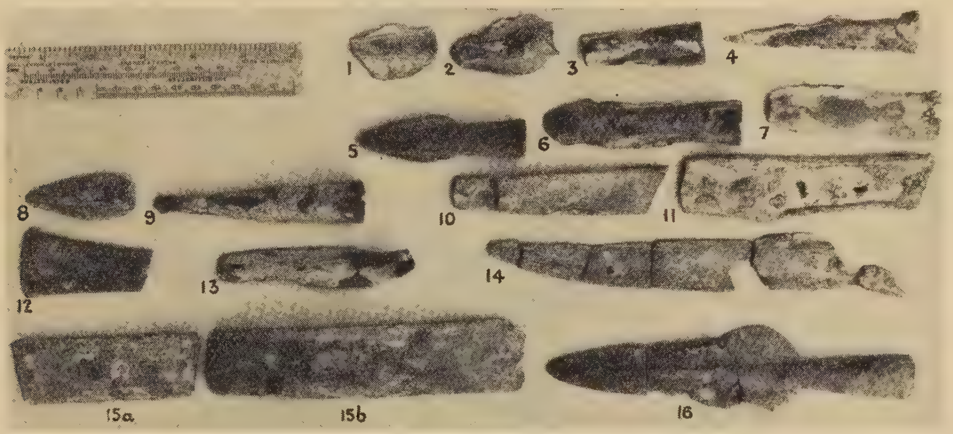

Fig. 20.—Bronze Tool and Weapons said to be from Pólis. 1–9, 13, 16, Spears; 11, 14, Knives; 12, Chisel; 15, Sword. Scale, 1 : 4.

## OBJECTS OF SILVER

*Rings.*

1. Small signet-ring, diameter 0·023 m. Broken; design lost. Position: B., above datum.

2. Similar, diameter 0·024 m. It is uncertain whether there was a design. Position: D.1. 0–0·50 m. above datum. Prof. Myres tells me that both these rings are Egyptian of the twenty-sixth dynasty.

## BRONZE OBJECTS SAID TO COME FROM PÓLIS

Fig. 20 shews a group of bronze objects not found in the excavation, but said to come from Pólis.

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[1] Cf. a bronze pin from Tegea (*B.C.H.* 1921, 379, no. 130); one from Argos (*Argive Heraeum* II no. 725); and pins from Athens (*J.H.S.* 1931, 166; *A.A.* 1934, 238).

*Sword.*

Fig. 20, nos. 15 *a*, *b*. Length 0·07 m., 0.018 m. Two bits of a bronze sword [1] which do not join. Section, Fig. 21*a*. Flat grooves on each side of the blade.

*Spears.*

Fig. 20, nos. 1–9, 13. Short, deep type. No. 5 Length 0·082 m., width 0·025 m., length of hilt 0·035 m. Holes for rivets.

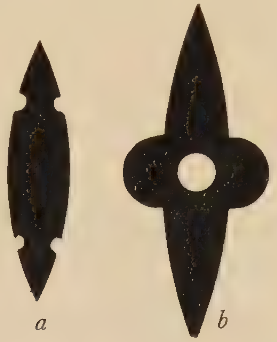

Fig. 21.—Sections of Bronze Weapons, said to be from Pólis. Scale, 1 : 1.

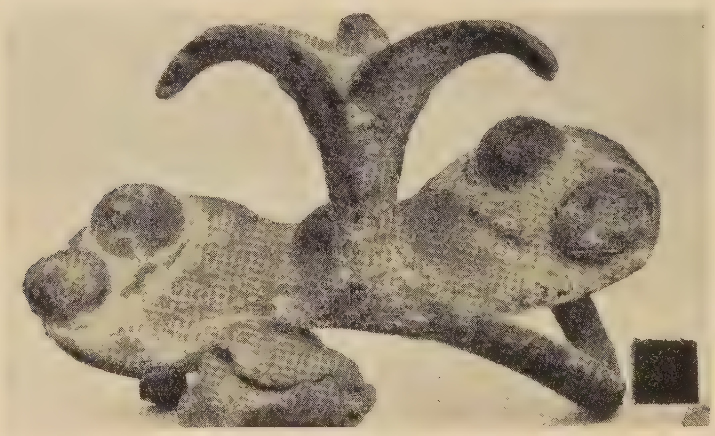

Fig. 22.—Bronze Laver Handle, said to be from Pólis, Ithaca. Scale, 9 : 10.

Fig. 20, no. 16. Length 0·187 m., greatest width 0·045 m., length of hilt 0·058 m. Lance-shaped [2] spear, broken in two places. Section, Fig. 21*b*.

*Knives.*

Fig. 20, nos. 10, 11. Three pieces of a large knife of a Mycenaean type. Hilt flanged and pierced, straight back (cf. Karo *Schachtgräber* Pl. LXXII no. 218).

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[1] Cf. a sword from Drajna-de-jos (*Dacia* ii 351, Pl. ii 7). See also the iron sword found in the excavation, p. 70 no. 1 above.

[2] Childe's Danubian VI. See *Dacia* ii 359, no. 16, from Drajna-de-jos. Cf. Marinatos 'Εφημ. 1933, 92.

Fig. 20, no. 14. Five pieces of a knife also of Mycenaean[1] type, but with a rounded back. (Cf. Karo, *op. cit.*, no. 216.)

Fig. 20, no. 12. Length 0·067 m., width 0·04 m. Chisel. Broken. Short, broad type.[2] There is a perforation.

Fig. 22. Laver handle. A bud on a stirrup-like handle, set on a figure-of-eight plate, with five studs. The bud is more developed than the clay buds found in the Kerameikos, and dated to the middle of the seventh century.[3]

Sylvia Benton.

## Chemical Examination of Six Pieces of Tripod-Cauldrons

(By O. Davies)

The following fragments were examined:

1. A handle, no. 1 (*b*).
2. A handle, no. 7 (*b*).
3. A leg-plate, no. 9 (*a*.2).
4. A rivet in no. 9 (*a*.2).
5. A leg, no. 11.
6. A strut (not catalogued).

| | Cu. | Sn. | Zn. | Fe. | Pb. | Sb. | As. | Ni. | Co., Ag,. Bi. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 69·18 | 1·07 | 6·56 | ·65 | 0 | ·24 | tr. | 0 | 0 |
| 2 | 78·02 | 0 | 0 | 4·42 | ·91 | 1·69 | 0 | 0 | 0 |
| 3 | 97·63 | ·42 | 0 | ·95 | 1·08 | ·35 | 0 | ·92 | 0 |
| 4 | Some | 1·25 | ·2 | 1·2 | 1·38 | 5·59 | 0 | tr. | 0 |
| 5 | Much | ·22 | 0 | 1·54 | 0 | ·39 | 0 | 0 | 0 |
| 6 | 98·00 | 0 | ·11 | ·52 | ·17 | ·06 | 0 | ·55 | 0 |

None of the specimens are bronze and most of them are fairly pure copper. The presence of nickel in 3, 4, 6 is noteworthy. The source of the antimony, except in the case of 4, may be an accidental addition of scrap metal, for antimony was fairly widely used in prehistoric Europe as a cheap substitute for tin; the antimony may also be an ore impurity.

The most interesting specimen is 1,[4] which is to be regarded as undoubtedly brass. It is therefore one of the earliest known specimens of brass in Greece, though I recently examined a pin of Geometric date from the Argive Heraeum which contained nearly as much zinc.

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[1] Both knives belong to Karo's class (a) with one cutting edge. The peculiarity of Mycenaean knives appears to be that they were made with hilt and blade in one piece. Like the swords, their hilts were pierced and developed flanges (Karo, *Schachtgräber* Pl. C). The iron knives from Illyria seemed to be derived from these, preferring the rounded variety; see the finds from Sanskimost, *W.M.B.H.* vi, p. 62 *bb*.

[2] Cf. the bronze chisel found in the excavation p. 68 no. 30 above. Perforated chisels are found in the Cyclades, ’Εφημ. 1899 Pl. X, and at Mesará, Xanthoudídes *Vaulted Tombs of Mesara*, Pl. XLIII*b*, 1500.

[3] *A.A.* 1933, 274. Cf. also the buds on a flat laver in the National Museum, probably No. 10646 from the Peiraeus.

[4] The iron in specimen 2 may be due to some accidental contamination.

# THE EVOLUTION OF THE TRIPOD-LEBES [1]

(Plates 18–26)

The tripod-lebes is characterized by two round vertical handles cast with a plate behind and a strap in front, both of which are riveted to the cauldron,[2] and by three legs, each cast with a plate, also riveted to the cauldron and supported by struts. Schwendemann [3] asserts that it is properly a cooking-pot, for in Homer a mixing-bowl is a krater, but a big tripod is put on the fire to provide bath-water,[4] and a hog could be seethed in a lebes.[5] The monuments support this view, for the tripod-lebes is not used as a mixing-bowl [1] in a komos scene or the like, even long after it had lost its function—to be set on the fire and then taken off again. Other types of cauldron are, however, set over the fire.[2] To put a three-legged stand among the sticks and set a pot on it is still a simple form of open-air cooking. The cooking function is clear in a relief in the Lateran Museum.[3] It may also be indicated on a Geometric sherd at Sarajevo.[4] The hatching between the legs probably represents the sticks set in readiness to cook the banquet which will take place after the boxing-contest in the foreground has been decided. This interpretation receives confirmation from a Corinthian aryballos in the Louvre (from Kamiros [5]) to be dated about 600 B.C. The tripod to which the two men are running is standing over a fire. Laurent [6] gives examples of tripods on Geometric vases, and convincingly suggests that they are prizes in boxing-contests.[7]

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[1] This paper began as an attempt to classify the tripod-cauldrons found at Ithaca. No detailed study of this class of tripod has appeared since Furtwängler's, although much material has accumulated in the interval. The Ithaca publication could not contain a corpus of tripods, and yet the Ithaca tripods could not be appreciated without a survey of the other material. It was therefore desirable to publish a separate paper, dealing with the subject generally. Even so, the number of unpublished tripods from the Idaean cave makes it impossible to deal more than summarily with them. The tripods from Praísos and Palaíkastro will be published soon.

[2] Although later discoveries must inevitably modify some of Furtwängler's theories, his observation of facts rarely errs. He has already given the above description (*Olympia* iv 78), but it has to be restated because he has been misunderstood. Miss Lamb (*Greek and Roman Bronzes* 46) fastens the strap (ii) to the plate (iii) (a construction which occurs in *Olympia* no. 572, but is rare) instead of to the bowl, as happens in that and almost every other case; and she leaves the connection of the parts uncertain. Miss Tosti (*Historia* 1933, 419) reduces the parts of the handle to two. She also makes two handles spring directly from three legs—an impossible construction. See Mr. P. de Jong's reconstruction, Fig. 17 on p. 67 above.

[3] *J.d.I.* 1921, 120, 144.

[4] *Il.* xxii 443, xviii 344.

[5] *Il.* xxi 362, 363. In the fragment of Alkman (Bergk 33) quoted by Schwendemann (*l.c.* 144) τρίποδος κύτος specifically means a tripod-lebes. See below p. 75 note 2, also the aryballos no. 9 on p. 109 below.

Euripides (*Cyclops* 399) is less definite with λέβητος κύτος, but it is clear from the context that nothing smaller than a tripod-lebes could be set on three cartloads of fuel, while no other kind of cauldron would be so handy for a giant, who wished first to brain a man and then cook him and a companion. But this reference does not, of course, mean that the tripod-cauldrons defined above were in common use in the fifth century.

Svoronos (*B.C.H.* 1888, 405 ff.) has shewn that the words τρίπους and λέβης in inscriptions from Gortyn and Knossos indicate a value of one stater, and refer to the surcharging of Cretan staters. As these surcharges consist both of cauldrons by themselves and tripod-cauldrons, the terms here do not seem to be interchangeable.

The Homeric description of a tripod-cauldron is τρίπους ὠτώεις (*Il.* xxiii 264). τρίπους is certainly different from λέβης in *Il.* xxiv 233. Pauly-Wissowa *Supplt.-Bd.* vi *s.v.* Λέβης repeats an old error by trying to find a special shape for an ἄπυρος *i.e.* a ' new ' lebes. See Schwendemann *op. cit.* 144.

Tripod-cauldrons clearly have a predecessor in a tripod at Knossos [8]; this has three legs riveted a little below the rim and two vertical handles set on a plate which runs right round the rim. Such a form cannot be directly derived from the usual Cretan cooking-pot with three horizontal handles,[9] and there must be other ancestors in the pedigree of the tripod-

[1] *E.g.* on an aryballos in New York, Johansen *Les Vases Sicyoniens* Pl. 22 no. 2. A mixing-bowl is required by the story of Herakles and the Centaurs; it is set on a pillar and ornamented with birds (cf. Poulsen *Der Orient und die frühgriechische Kunst* 129, Fig. 142 from the Tomba Barberini).

[2] Throughout this paper the term lebes is confined to wide-open basins, of the shape depicted on the early sixth century Attic sherd published by Graef (Pl. 27) and inscribed λέβης. This was the shape of the tripod-lebes. Other pots of various shape, set on stands, I call dinoi. Very often they had broad shoulders and an everted rim.

A list of Attic b.f. and r.f. vases on which tripods are represented in cooking scenes is given in Appendix I (p. 127 below).

[3] Helbig *Führer* (1913) no. 1154. Medea and Peliades. One daughter has brought in the tripod and is setting it down. The legs of the pot have lion's feet and the struts are not visible. Otherwise it resembles our type, except that the handles appear to be unfixed, instead of being fixed upright.

[4] *W.M.B.H.* xii 272 Fig. 30 no. 61. Bought in Athens, but said to be from Thebes (cf. no. 6 below).

[5] *Necrocorinthia* no. 552; Pottier A 472, Pl. 16 (cf. p. 109 below).

[6] *B.C.H.* xxv 143 ff.; Prof. Beazley informs me that the pictures on the vase shewn in Figs. 1 and 2 are false. That on Fig. 1 was no doubt copied from the Sarajevo sherd before it left Greece. See the list of Geometric monuments p. 105, below No. 11. Fig. 1 is reproduced by Curtius *Die Antike Kunst* ii 74, Fig. 7, 1.

[7] Schwendemann (*op. cit.* 153) gives a list of tripods depicted in athletic scenes.

[8] Evans *Prehistoric Tombs of Knossos* Fig. 38, pp. 36 ff. 119. The tripods found at Dendra (Persson, *The Royal Tombs at Dendra* 98, Pl. 30) may be of this type but I have not been able to examine them.

[9] Evans *P. of M.* ii 629. Chapouthier (*Etudes Crétoises II, Mallia* 40), finding that he has illustrated a vessel described as having three horizontal handles, by one which had two and a loop, dismissed the variation as being 'a common primitive convention.' The Middle Minoans were hardly primitive, and these handles must have been functional.

This confusion between horizontal and vertical handles has been aggravated by the cauldron, one of which is the Anatolian cooking-pot with one or two vertical loops.[1]

An attempt to get the advantages of both the Cretan types and the Anatolian is seen in a cooking-pot from Gourniá,[2] in another from Malliá in the Cándia Museum, and a third from Shaft–Grave IV at Mycenae.[3] A three-handled pot is difficult to lift, and when the pot became really heavy, symmetry had to be sacrificed to convenience. Three vertical handles are, however, useful if it was proposed to sling a cauldron on a hook, as Hazzidákis [4] observed. To lift it off the fire and carry it on a stick two vertical handles are required.

In the Mycenaean room at Athens, case 42, is an unnumbered bronze tripod (Fig. 1*a*).[5] One leg and parts of the cauldron have been restored, but the relation of handles and legs is certain. The legs are joined to the plate by a rough strut (which may be modern). The vertical rope-handles stand well above the rim and below them (one is broken) spring the old loops. The handle-plates also are of a strange shape which can be parelleled at Olympia. The exact date of the invention of leg-struts and of this combined handle and loop must remain uncertain, but to judge from the context in which the tripod was found probably preceded the fall of Mycenae. In any case if we set beside the Stais tripod (my Fig. 1*a*) Mr. de Jong's restoration of *Ithaca* tripods 1 and 2 (p. 64, Fig. 14 above) it is obvious that all three are essentially the same (except perhaps in the struts). The detail of the nicked fillets on the leg connects *Ithaca* nos. 1, 2 with the series of later legs, rather than with its Mycenaean predecessor. That

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perversity of Hazzidákis in setting a reconstruction with horizontal handles below his photograph of vertical handles (Ἐφημ. 1912, 221). The simpler but erroneous version is reproduced by Lamb *op. cit.* Fig. 3*c*, and Evans *P. of M.* ii Fig. 356.

[1] One loop-handle is associated with earthenware tripods in a Troy II layer at Thermi (Lamb, *B.S.A.* xxx 25 no. 146, 3; cf. Schliemann *Ilios* no. 442). It reappears in the incense-vases in L.M. III (Wace *Chamber Tombs at Mycenae* Pl. liv nos. 10, 11). Schliemann says that two-handled cooking-pots, with three legs, were found in Shaft Grave II (*Mycenae* 158). That this type survived into Hellenic times is proved by the two clay tripods found in the 'Tomb of Isis' at Eleusis (Ἐφημ. 1898, 108 Fig. 28).

[2] Boyd Hawes *Gournia* Pl. 4 no. 72 (L.M.I.).

[3] Schliemann *Mycenae* no. 440. Karo, *Schachtgräber* Pl. 163 no. 579.

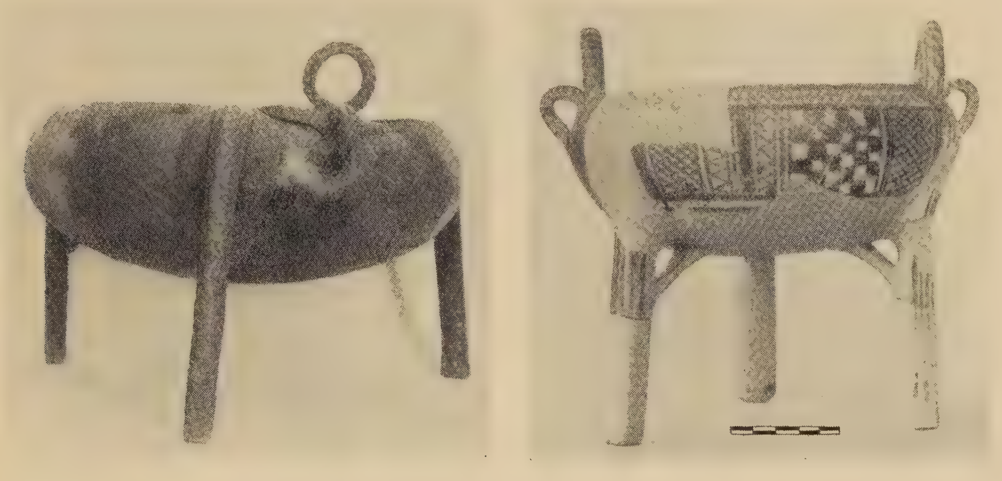
[4] *Op. cit.* 220.

[5] Height 0·29 m., diameter *circ.* 0·41 m., diameter of handle 0·072 m.; leg hexagonal. Stais put it together and published it summarily (Δελτ. 1916, παράρτ, 82). Schliemann found it 13 feet down 'in the Acropolis,' *i.e.* probably near the grave circle (*Mycenae and Tiryns* 111 ff.); he figures one of the handles as 'an inexplicable object' (*id.* 74 no. 120). Its context is: two double axes, five knives, two spear-heads (unidentifiable), two vases (also unidentifiable), and wheels with tangs. Above and below were found two lead wheels. Most of these objects are rather indeterminate. All may be, and the knives and axes must be, Mycenaean. For wheels without the tangs cf. the shape of the gold-leaf wheels in Shaft-Grave IV, or the representations on the grave stelai.

This tripod is described by Furtwängler *op. cit.* 78 foot.

cooking-pots should continue to be used, and their legs and handles to be cast, after the fall of the Mycenaean empire, is not unexpected. Their reappearance, unchanged in essentials, but with later characteristics, proves that the art of casting was never lost. Examples of plain iron legs of this type have been found in the Tiryns hoard, which is pre-Geometric.

A very simple form of the handle and loop (Fig. 2*a*) was found in the Idaean cave, but as no pre-Hellenic objects are reported from there it is probably not as early as it looks.



*a* *b*

Fig. 1.—*a*, Tripod-Cauldron from Mycenae in Athens; *b*, early Proto-Geometric Tripod-Lebes from the Kerameikos.
Scale : *a*, c. 1 : 7; *b*, c. 2 : 7.

There are numerous miniature tripods at Olympia, mostly too rough to be taken individually as evidence of form; but *Olympia* no. 539 is carefully made and has a deep bowl, a leg with a square section joined by a strut like that of the Stais tripod, and a thick but flattened loop. None of the miniatures, however, shews the pronounced inward curve of the bowl at the rim which appears on the Stais tripod, in *Ithaca* nos. 1 and 2, in the two clay tripods, with Protogeometric decoration found in the Kerameikos (Fig. 1*b*),[1] and in Furtwängler's reconstruction (*Olympia*, Pl. 34A).

As the handles would cause a great strain on the rim, the rim of the Knossos cauldron has been reinforced. The same end is achieved, in the Hellenic examples, by hammering the rim thicker than the rest of the basin.[2]

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[1] I mention and illustrate these tripods by kind permission of Dr. Kübler (cf. *A.A.* 1935, 285). They afford confirmation of (*a*) Stais' reconstruction of the Mycenae tripod, and (*b*) the reconstruction of the handles of *Ithaca* nos. 1, 2.

[2] See sections above, p. 69, Fig. 18*a–c*.

The maker of the Stais tripod observed that the loop could still be useful in distributing the strain; this is also the purpose of the stays that were later added on each side of the handle. Loops are also preserved in the miniature tripod at *Olympia* (no. 539), which has birds on the handles as well as developed struts on the legs. In this tripod, which is later than *Ithaca* nos. 1 and 2, the loops are flattened into a narrow strap. Straps become broader later, but throughout their history the straps of these handles retain something of their original loop form.[1] Another interesting question is raised by the loops and their attachments. Those on the Stais tripod have a distinctly bird-like shape. Fig. 2, *b* shews the base of a handle-strap at Olympia, where the imitation of the bird form seems to be deliberate.

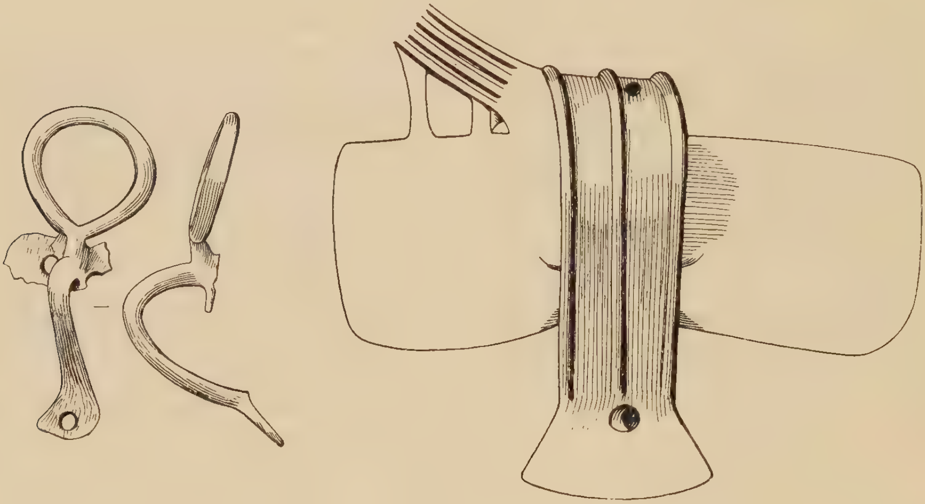
*a* *b*

FIG. 2.—*a*, FROM THE IDAEAN CAVE AT CRETE; *b*, HANDLE-STRAP AND PLATE AT OLYMPIA. Scale : *a*, 1 : 2; *b*, 1 : 2.

## RELATIVE CHRONOLOGY

### 1. FURTWÄNGLER'S CLASSIFICATION

Furtwängler's classification may be summarized as follows:

*Class I: Cast* (nos. 549–582A). Tripod-legs with a triangular or rectangular section, tapering below and ornamented only by incised ribs or fluting, give way to legs with a flatter section which do not taper. At the end of the series a leg with a simple section reappears (*e.g.* no. 566) now decorated with zigzags. The handles that accompany these legs have a rounded section,[1] but some of them are richly decorated, occasionally with spirals (*e.g.* no. 570).

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[1] Cf. the late handle *Olympia* no. 639.

*Class II: Hammered* (nos. 583–621). These tripods are made of thin plates of bronze, decorated with stamped[2] designs, the characteristic motive being concentric circles joined by tangents. Cast horses and human figures appear on the handles.

*Class III: Cast* (nos. 622–41). Casting is again in fashion, but now the sections spread, and, according to Furtwängler, imitate those of the hammered type. Nos. 622–5 are decorated only with plain ribbing or notching, nos. 626–33 are heavily decorated with patterns said to be derived from Class II. These same patterns also decorate the handles, which have a flat section; the latest of the handles are pierced. The figurines are said to be cast with the handles.

The most unsatisfactory features of this classification are:

1. The gulf between Furtwängler's Classes I and III which are shewn to overlap by evidence from Ithaca.
2. The derivation of Class III from Class II, and not from Class I.[3]
3. The description of certain Class III patterns as concentric circles when the draughtsman of the Olympia publication depicts spirals.

These latter are, in fact, spirals (cf. Pls. 18, no. 6, 19, no. 1). Furtwängler was only once able to mate a handle and a leg with certainty.[4] At Ithaca legs 3 and 9 were both found attached to their handles. No. 9 belongs to Furtwängler's Class III, but no. 3 has the leg-section of his Class I, the spirals he attributes to the middle period of Class III, and a handle of the beginning of Class III, with a flat section. Another Ithaca leg (no. 7) has the section of Class I, the decoration of Class III (spirals), and (probably) an open-work handle, *i.e.* late Class III. Unless there was a late eclectic school for bronze tripods at Ithaca, a new classification must accordingly be found.

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[1] Except no. 582.

[2] Mr. G. Deeley has convinced me that no stamp was used, and that the patterns are chased. Tool marks can be seen on the handle from Olympia, Athens no. 7483 (here Pl. 18, no. 2) beside the label.

[3] Furtwängler's classification slurs over the fact that there are sometimes figurines on handles of his Class I.

[4] Cf. p. 93 below.

## EARLY TRIPOD-CAULDRONS

On the evidence, *Ithaca* nos. 1 and 2 come at the head of the series of Greek tripods.[1] Next will come the miniature tripod at Olympia (no. 539), still not of the canonical type. Furtwängler notes that the earliest tripods at Olympia are of iron, and iron legs with the section of those of the Stais tripod have been found in a pre-Geometric context at Tiryns [2]; but the Stais tripod shews that all iron tripod-legs are not earlier than all bronze ones, as Furtwängler thought.

These legs taper and have a simple section, while the handles, which are ornamented with strokes, have a rounded section which is broad on the inner side (above p. 7c Fig. 19, and Pl. 10). There are at Olympia [3] and Delphi [4] legs and handles which differ from these only by being larger, and increase in size is evidently the next development. When legs grew heavier, it would be of great advantage to have a handle large enough to take a pole which could be carried on the shoulder. Spiral decoration occurs on a handle at Olympia with a rounded section (no. 570), and Furtwängler is right in deriving it ultimately from Mycenaean spirals. There is a nearer contact with the open-work spirals on the tripod-stands [5] found at the Pnyx [6] with early Geometric pottery. The spirals may well be contemporary with the spectacle-brooches at Sparta.

Large spirals with short tangents are earlier than those on the leg *Ithaca* no. 3; although smaller and farther apart, these are made in exactly the same way. They are put on in the same experimental fashion,[7] but clearly they lead to the spirals on *Ithaca* no. 9, which are identical with Furtwängler's Class III spirals.[8] It looks as if decoration alone were a poor basis for classification. *Ithaca* no. 3 cannot be late in the series, for although it has the new flat handle, the leg is square in section, and solid—is, in fact, of the most primitive type. *Olympia* no. 566 may come before no. 563, even though it has a zigzag pattern. The section of no. 563 is considerably more spreading than that of no. 566, and on its strut it has the very zigzag that has condemned no. 566 to the end of Class I, and moreover, in open-work, like Furtwängler's latest type of handle. If it is right to attribute the heavy handle with a zigzag, *Ithaca* no. 6, to a leg with a solid section, this is another instance of an early zigzag. In any case the weight of the handle places it fairly early. The zigzag is a common pattern, found in decorative metal-work both of the Mycenaean period, and of many other periods.

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[1] Cf. *Ithaca* III, pp. 57, 64 above. For reconstructions of leg and handle sections of Ithaca tripods, cf. *id.* Fig. 19.

[2] Karo A. M. 1930, 137, Fig. 7.

[3] *Olympia* no. 549. Miss Lamb's series begins with these heavy legs (*op. cit.* 44).

[4] Inv. nos. 2467, 2852.

[5] I use this term to denote a three-legged stand surmounted by a ring, the German 'Stabdreifuss.' Miss Lamb's designation 'sub-Mycenaean' (*op. cit.* 46) has obvious disadvantages.

[6] *A.M.* 1893, 414, Pl. 14. The herring-bone ornament on its legs is like the stroke ornament on the handles at Olympia (here Pl. 18, 1 and 2).

[7] Cf. the spirals on a severely Geometric bronze sphinx in London (1930. 6–17.2), said to be from Crete; it may have belonged to a tripod-handle.

[8] *Olympia* no. 629, Pl. xxviii, and others.

It is not, however, found on tripod-cauldrons until legs have ceased to taper. The majority of legs at Olympia, ornamented like *Ithaca* no. 1 with strokes on raised fillets, retain a simple section, but no longer taper; therefore a straight [1] leg was the next development. Sometimes the leg actually increases in size at the bottom,[3] perhaps to give greater stability.

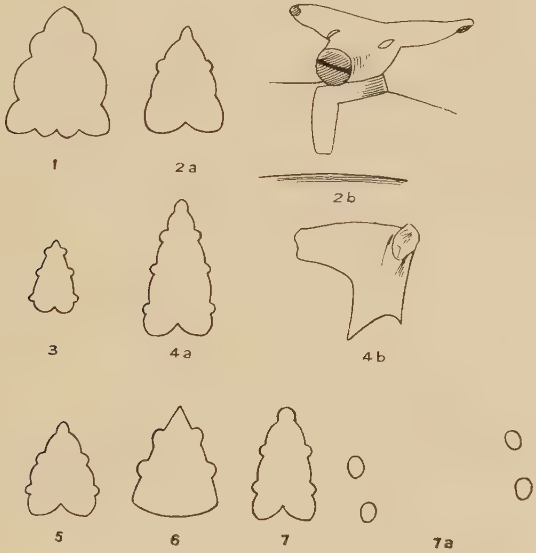

Fig. 3.—1–4*b*, Sections of Handles with Bulls [2]; 5–7, Sections of Handles with Horses; 7*a*, Plan of Hoof-Marks on 7. 5, Olympia 274; 6, Delphi; 7, Delphi 214. Scale: 1 : 3.

Large handles with a round section do not occur at Ithaca, but there are so many at Olympia [4] that they must have continued to be used after legs, though still solid, had ceased to taper. On the other hand, in *Ithaca* no. 3 a new type of handle with a flat section is found in conjunction with solid legs of exceptional weight.

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[1] *Olympia* nos. 551–8.

[2] Fig. 3, no. 1 *Olympia* no. 572, inven. no. 5449, Pl. xxix; my Pl. 18, no. 2. The Olympia drawing has rather exaggerated the herring-bone decoration and softened the angular contours of the bull. No. 2 (Olympia, uncatalogued, unless it is inven. no. 9952. In that case the spirals attributed to it are an error.) No. 3 *Olympia* no. 572, inven. no. 5229; (my Pl. 18, no. 1). No. 4 (*Delphes* no. 213).

[3] *Ithaca* nos. 3 and 5, and a leg in London (p. 96 Fig. 10*a* below).

[4] *Olympia* nos. 569–75.

It is not possible to make a series based on the relative height of the handle above the bowl. An early handle (*Delphes* no. 213) [1] stands right above the bowl, while handles which are late, both by Furtwängler's classification and mine, are well below it (*e.g. Olympia* no. 639, *Ithaca* no. 9). Schwendemann, with his eyes on later developments, has failed to observe this fact.[2]

## STYLISTIC EVIDENCE OF FIGURINES

*Birds.*—Further evidence can be derived from figurines. To begin with those on the handles, birds, as Miss Lamb notes,[3] occur early [4] and late,[5] so they do not help classification.

*Bulls' heads.*—The sections of handles with bulls' heads (see my Fig. 3 and Pl. 1) vary from the broadest to the narrowest rounded section. The bulls' heads vary little: they have eyes, no ears, and a slit across the muzzle for a mouth. They all seem to be of the long-horned type beloved at Mycenae, though the horns are often broken off. Their flat planes are in contrast to the swelling contours of Mycenaean animals.[6] The magnificent

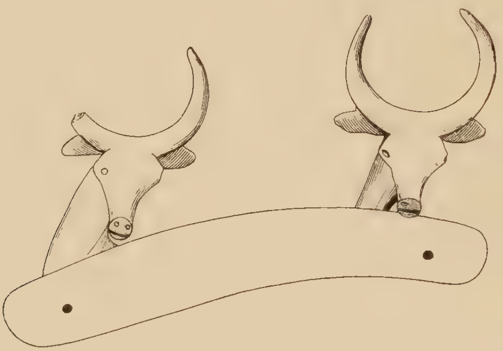

FIG. 4.—OLYMPIA IV, NO. 643, LAVER HANDLE.
Scale: 1 : 3.

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[1] My Fig. 3, no. 4.

[2] *J.d.I.* 1921, p. 126 (for the handles of hammered tripods, see p. 123 below).

[3] *Op. cit.* p. 40.

[4] *E.g. Olympia* no. 539, Candia Museum, no. 112, from the Idaean cave, here Fig. 5*c*.

[5] *E.g.* Eagles on the Ashmolean handle (my Pl. 20, 1 see pp. 83 f. below): add *Olympia*, no. 638, which is open-work.

[6] Schliemann, *Mycenae*, p. 216; cf. *Dendra*, Pls. ii, xiii.

bulls' heads (my Fig. 4) on the handle-plate at Olympia[1] still have flat planes, but they have acquired ears, which, however, are quite plain. A further development is shewn on a seventh-century attachment-head also at Olympia (my Pl. 20, no. 4)[2] which has a good deal of modelling, the inside of its ears being clearly shewn.[3]

*Horses.*—A sturdy, rather primitive little horse was found on a handle at Olympia,[4] with a medium rounded section but no stroke ornamentation (see my Pl. 18, no. 6 and Fig. 3, no. 5). The handle has on the strap the early type of spiral found on the spectacle-brooches. There is an unpublished handle at Delphi[5] which is very heavy (my Fig. 3, no. 6); it has horse's feet broken above the hock. Otherwise horses are confined to flat handles,[6] and are very popular on open-work handles.[7] None of these horses differ very much in development. Still, there does seem to be a slight advance between the horse of *Ithaca* III no. 6 (Pl. 15*b*), which is a solid handle, and those of *Ithaca* III no. 7 and 9 (Pls. 12*a*, 15*c*), which are open-work handles. The horse on a handle at Athens (my Pl. 19, no. 1) has late characteristics (see p. 85 below) and the zigzag is finer than on *Ithaca* III no. 9 (Pl. 15*c*). The horse on the Ashmolean handle[8] (my Pl. 20, 1), which is the openest type of handle, is the most advanced animal of the short-legged type. It does seem as if horses developed as handles became lighter.

If the horse *Ithaca* III no. 16, (p. 63, Pl. 15*d*) belongs to a tripod, it is distinctly more primitive than the others. The stump of the tail and the muzzle are thin and bent; it has enormous haunches and a thin barrel. In spite of the very bad condition, it is more like the horses of the severe 'prothesis' vase style[9] than any other horse I know. The painted horses represent an impossible ideal for a bronze-caster; breaks would be liable to occur in all the legs and at the haunches. In attempting synchronisms allowance must be made for a different material. Similarly, the plastic horses on vase-lids are more corporeal than those in contemporary vase-painting.

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[1] *Olympia* no. 643. Probably from a wide, shallow lebes. See p. 126 below.

[2] *Olympia* no. 789.

[3] On bulls see also p. 95.

[4] *Olympia* Pl. xxx no. 574; my Pl. 18, no. 6. For the long nose, cf. the horse on a painted tripod-handle (*Argive Heraeum* ii, Pl. lx, 19*b*; my Pl. 26, no. 2, and see p. 105 below).

[5] Inv. no. 4435. See also p. 99 below.

[6] *E.g. Delphes* nos. 233 and 234; *Ithaca* no. 6 (Pl. 15*b*).

[7] Ithaca iii nos. 7, 9 (Pls. 12*a*, 15*c*); *Olympia* no. 640; Ashmolean Museum, G. 891 (my Pl. 20, no. 1, Fig. 5*b*); Athens (my Pl. 19, no. 1); *Delphes* p. 49, animals, no. 133 (my Pl. 18, no. 4); the marks of the open-work handle are visible underneath.

[8] See p. 84 below.

[9] Pfuhl, Fig. 10; amphora, cf. The Revelstoke amphora *I.L.N.*, March 16th, 1935, p. 442, Fig. 4. See p. 102 below.

Next to *Ithaca* III no. 16 comes *Olympia*, no. 574, and then the rest of the horses found at Polis. The contours are worn, but it is clear that contrast between haunches and barrel is no longer desired.

Cast tripod-horses have short weedy legs; the tails are generally long; mane, ears and eyes are slightly indicated; and there is a general effect of solidity. The horse on the Ashmolean handle[1] (my Pl. 20, no. 1; section on Fig. 5*b*) which I publish by kind permission of the Keeper, stands at the end of the series, with better modelling, bullet-eyes,[2] and a better definition of his other features.

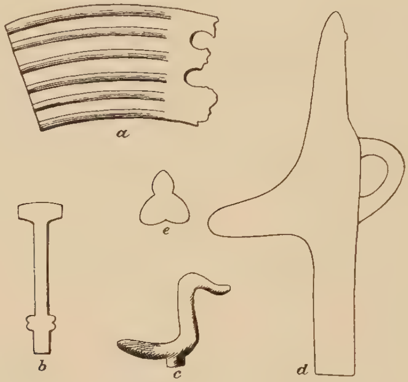

Fig. 5.—*a*, Handle in Olympia; *b*, Section of Handle in Oxford; *c*, Bird from Idaean Cave; *d*, Table-Leg in Delphi; *e*, Section of a Tripod-Handle at Mycenae. Scale: *a–c*, *e*, 1 : 2; *d*, 1 : 4.

The horses on hammered tripods[3] shew a marked advance in a general increase of tension, so that they stand up alert and σεμνοί like Parthenon sheep (see my Pls. 18, 3 and 19, 2). This increased tension is found fully developed in vase-painting [1] of the seventh century, but it began earlier. The mane, tail and other features are a little smarter than those of the horses on cast tripods, but the modelling is at about the same stage of development. The legs are generally longer, and the long-legged horse [2] standing rather stiffly on a tripod-handle in the Athens museum (my Pl. 19, 1) places this handle also late in the series. Its pattern is exactly that of the handle with the pig-nosed lion at Olympia [3] (my Pl. 24, no. 4).

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[1] G. 891, dia. ·23 m., w. ·04 m.; said to be from the Idaean Cave. This provenience is confirmed by a duplicate horse found in the Italian excavations (Candia Museum 112, my Pl. 21, 6). Two rather long struts, one broken, strap, parts of the plate, and the end of the horse's tail missing. On tangs at each side, two eagles. These are the only side adjuncts found on a cast tripod-handle. Commonest decoration of Cretan handles, open wedges between two fillets. See also pp. 82, 83, 99, 119.

[2] Cf. a peacock found at Perachora *B.S.A.* xxxiii, p. 215, Fig. 2.

[3] *E.g.* a horse on a handle from Olympia in Athens (no. 7483). The drawing (*Olympia* Pl. xxxiii) does not do justice to it, the contours are still Geometric (see my Pl. 19, no. 2); cf. also the drawing of *Olympia* no. 607 (Pl. xxxiii) with my Pl. 18, no. 3. Other horses of this type are *Olympia* no. 618 (Pl. xxvi), Athens no. 6241 (Casson *JHS.* 1922, p. 209, Fig. 1; better, Zervos *L'Art en Grèce* no. 53); Athens, nos. 6213, 6240, also from *Olympia*; no. 850; nos. 6554 and 6551, from the Acropolis (De Ridder *Acr.* nos. 500, 501); Berlin, from Olympia (Inv. Ol. 9600; Neugebauer no. 45, Pl. 7) Delos Museum, no. A541 (perhaps belongs to the handle B 1327). The last two have primitive features and may belong to cast tripod-legs; see p. 100.

*Men.*—Furtwängler is probably right in setting certain bronze figurines at the side of the handles of hammered [4] tripods. *Olympia* no. 617 had a spear in his hand, and was probably throwing it. In what direction? To the figures of the type already recognized [5] add the Dodona thrower [6] (my Pl. 21). He stood along the rim, his chest facing inwards; held the handle with his left hand, through which passes a big rivet, and flung the spear, or it may be a thunderbolt, from the small hole in his right hand, along the inside of the cauldron. The back-view is particularly fine, the front-view passable; the silhouette of the side-view, which is a little ridiculous, would melt into the handle. The profile of the face [7] is Geometric, compare that of the Departing Warrior [8]; but the treatment of the hair foreshadows later events.[9] His body is well modelled and like the horses shews a tension which is not found in earlier figures.[10]

The question now arises whether it may not be possible to connect many other warriors with tripods. A surprising number of them have a slight turn of head and legs, easily detected from behind (see my Pl. 20, no. 3).[11] They stand on sloping feet suited to the slope of a tripod-rim.[12]

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[1] *E.g.* on a krater in Athens, Pfuhl, Fig. 84. Contrast the weak-kneed horses on the ‘Departing Warrior’ krater in London, *JHS.* xix. Pl. 8.

[2] *Delphes* no. 131 (my Pl. 18, no. 5), which Neugebauer compares to his no. 45, is more like this Athens horse (see p. 99 below) of unknown provenience: add *Delphes* no. 133 (my Pl. 18, no.4), which also belongs to an open-work handle.

[3] No. 641.

[4] On his reconstruction see below, p. 123.

[5] De Ridder *Bronzes Antiques du Louvre* i, Pl. 12, no. 104. De Ridder (*Acr.*), nos. 50, 51; better Neugebauer *Antike Bronzestatuetten*, no. 14. Mr. Hampe (A.M. 1935–36, 285) wishes to group no. 50 closely with a Gorgon, but it is difficult to detach it from no. 51, of similar size and style. No. 51 must go closely with the Minotaur in the Louvre, which has a tripod-fitting.

[6] Carapanos *Dodone* Pl. xiii, 4. Cf. ‘Zeus thundering’ beside the tripod on the lid at Knossos (see p. 107 below).

[7] A broken statuette with a straight head in the Louvre seems to be by the same hand (cf. De Ridder, Pl. x, no. 83).

[8] See above, note 1. The full face of the Dodona statuette is perhaps the most terrible of all geometric faces.

[9] *E.g. Delphes* Pl. xiii, 3·3′ (note that the hair has the patterns of hammered tripods); 4·4′ with orientalizing wings (palmettes); last, the fully Daedalic figure, Pl. iii.

[10] See the list on p. 86 below.

[11] *Delphes* no. 19, p. 31. His face is not so blurred as the illustration *Delphes* V, Pl. II, 4 would imply. The photographs of the Delphi statuettes are poor. One would

The statuette Ithaca III no. 15 (Pl. 16) belongs to a fairly large group of statuettes which generally wear helmets. They have upturned faces,[1] and in this respect are exactly paralleled by figures on Geometric vases. The statuette from Ithaca is less advanced than the Dodona thrower in the tilt of the head, the treatment and fashion of the hair, and the development of the body. His attachment was wrapped round some edge,[2] part of which has come away with it, and it exactly fits a hole in no. 3 handle (*Ithaca* III Pls. 13*a*, 16). This leaves two rivet-holes and a break where the early horse no. 16 *id.* Pl. 15*d*, which was found with him has been placed. The man was not put into the reconstruction, because he would have stood at rather an awkward angle. He differs from most Geometric statues in having his hands quietly by his sides, a possible position when leading a horse.[3] The suggestion of an early place in the series for *Ithaca* no. 3 and of its association with a primitive horse, receives confirmation from a handle-fragment surmounted by an early horse at Cassel,[4] which I publish by kind permission of Dr. Möbius, in Fig. 6. For the composition of the group compare *Delphes* nos. 233,[5] 234. The feet of the man from Ithaca will have exactly the same position on the handle as the groom on *Delphes* nos. 234, except that he faces outwards. This composition would explain his slight turn of head and legs. The Delphi horse is pulling back against the rein, as the Ithacan horse appears to be doing. Is that the explanation of the attitude of all Ithaca tripod-horses? The horse on tripod 9 (*Ithaca* III Pl. 13) is well off the middle of the top of the handle; there is a mark before the horse which could accommodate a man but not another horse. Therefore a groom has been restored. Attention has been called to the excessive height of the groom in proportion to the size of the horse (*id.* p. 67,

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not deduce from *op. cit.* Pl. I, 8, a beautiful statuette in good condition: but see my Pl. 20, no. 4 (*Delphes* no. 23). It is the upward turn of the face that makes these statuettes so difficult to photograph (cf. Zervos no. 73, also no. 70).

[12] See sections (p. 69 above, Fig. 18*a–c*).

[1] *E.g.* Athens, no. 6616 (De Ridder *Acr.* no. 692; better, Zervos, nos. 69–72); no. 7729; no. 6178 (*Olympia* no. 244); at Delphi, *Delphes* no. 23 (Pl. 1, 8; my Pl. 20, no. 2; Zervos no. 73); no. 22 (Pl. ii, 6); no. 19 (Pl. ii, 4; my Pl. 20, no. 3). The tilt of the head recalls the heads on the 'severe prothesis' vase (Athens, no. 804; Pfuhl, Fig. 10; Collignon-Couve, no. 200).

[2] See p. 99 below.

[3] Cf. the vase Athens no. 898. Collignon-Couve no. 210 say it is a man leading two horses, but probably there are two men. The front man holds his hands low, but away from his sides. The groom's trouser-pocket attitude has a fine air of nonchalance (see *Ithaca* iii p. 67).

[4] Museum no. A, I, b 679: dia. ·222 m., w. ·04 m.: about one-third of the lower part missing. This information was kindly supplied by Mr. R. M. Cook. These horses as well as no. 624 on a similar handle at Olympia (the reputed provenience of the Cassel horse) all have legs made separately, not cast in a block.

[5] It is impossible to fit in two confronted horses, in *Delphes*, no. 233, though evidently there was something in front of the horse. Restore a groom on the analogy of no. 234.

Fig. 17). This anomaly must have existed to an even greater extent on no. 234 at Delphi. Perhaps the contrast was welcomed, and the Geometric love of symmetry was satisfied by a similar contrast on the other handle. The horse on *Ithaca* III no. 6 (Pl. 13) is set nearer the middle, but there would be room for a groom there too.

Looking again at the severe ‘prothesis’ vase, one sees that the observation made about the horses is true also of the men. Such figures cannot be cast; they would break at the waist. Still, a statuette in Athens,[1] no. 6616, is like the men on this ‘prothesis’ vase. It is often difficult to say whether the other statuettes of the class fail to reach this ideal, or whether they are aiming at a later one; but though the side-view of the Dodona statuette recalls the old silhouette, front- and back-views have left it far behind. *Olympia* nos. 616 and 617 are still further removed from early Geometric art. Geometric horses and men have been inadequately studied, partly because few have been cleaned and still fewer have been well photographed. The Olympia tripods have sometimes been partially cleaned for a short distance and then drawn. This treatment has had

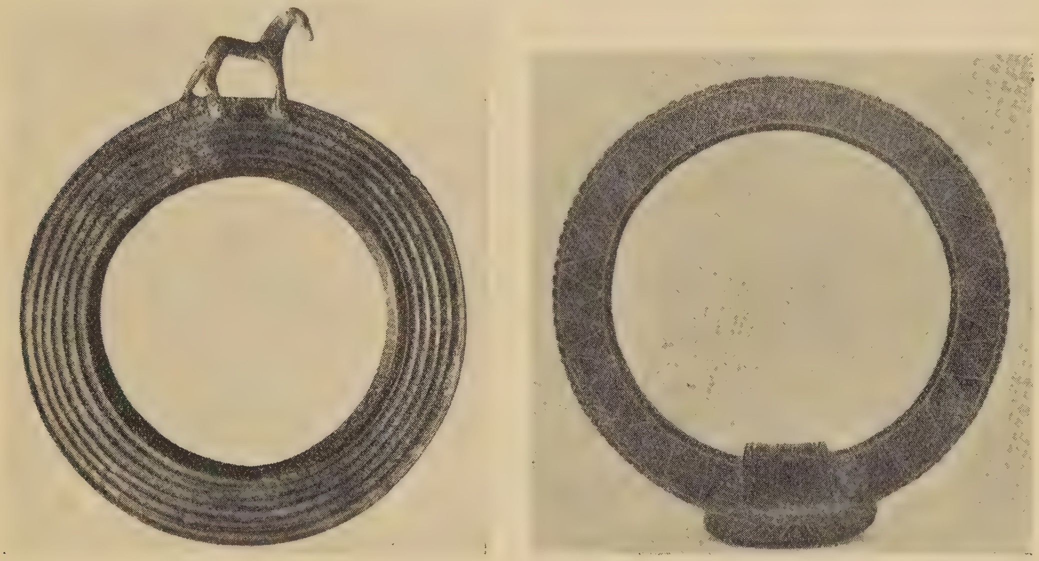
*a.* *b.*

Fig. 6.—Tripod Handles, *a*, said to be from Olympia, in Cassel; *b*, from the Idaean Cave, in Crete.
Scale: *a*, c. 1 : 4; *b*, 1 : 2.

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[1] Zervos 69–72; cf. the New York centaur group, Kunze *loc. cit.* beil. xxxviii.

a bad effect on the contours of the horses, which no photograph can wholly overcome. Still, the stylistic difficulties involved in Furtwängler's classification will now be apparent.

## TRIPOD-LEGS

Handles start small, become extremely heavy, and then a number of devices are used in pursuit of lightness. *Ithaca* III no. 3 (Pl. 13) is probably an early handle of the new shape, and it has one of the heaviest legs in existence. To lift that pot off the fire [1] and convey it any distance when full would be a heroic task—even Herakles chose a moment when the Delphic tripod was out of use—and accordingly Hephaistos [2] or another has set bronze wheels upon it.

Mr. de Jong's plan (*Ithaca* III Fig. 9), shews how this tripod would be constructed with wheels all running on the same axis. The extant leg is very slightly twisted and the others may have had a big twist. The hub is very big, in order to admit an iron shaft capable of bearing the enormous weight of this tripod. There is a hub of this diameter at Olympia (unpublished) with all the spokes broken, but it is so long that it is doubtful whether it could have belonged to a tripod.

There are three bits of a leg from Palaíkastro [3] (my Pl. 20, no. 5, Fig. 10*c*, and Fig. 8, 2) with a very much lighter section; the bottom contains a square shaft, the ends of which fit a small wheel [4] from the same site (my Pl. 19, no. 4). In 1905 the excavator suggested on the strength of Karo's reconstruction of the fragments from the Idaean cave,[5] that the wheel belonged to a wheeled-lebes. It is certain that the Eastern lebes on wheels [1] anticipated the construction of tripods on wheels. Wheels like no. 898, with short hubs and four spokes, are not uncommon in Geometric deposits, and some of them may belong to tripods.[2]

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[1] See *Ithaca* iii p. 59 for evidence that this tripod has really been used.

[2] Hephaistos worked for Phaiacia (*Od.* vii 92), whence tripods are said to have reached Ithaca (*Od.* xiii 13, 217). He made gold wheels only for the dumb-waiters of the gods, *Il.* xviii 375. Wheels would be suitable for the wide halls of a palace, but not for a cave. It was Payne who discovered the connection between the wheel and the tripod-leg. See Pl. 11*a* and p. 65, Fig. 15 above.

[3] Candia Museum, no. 848: combined h. ·44 m. The leg is unusually ornate for Crete.

[4] *Id.* no. 898: dia. ·06 m.; dia. of hub ·007 m. See *B.S.A.* xi, p. 306, no. 3, p. 307, no. 7. The lion there mentioned does not belong to a tripod-cauldron. It is ·024 cm. wide, and was filled with lead like the figures on sixth-century vases. It must come from a vessel with a sloping rim, as the paw towards which his head is turned is raised. It has a ring on the outside, no doubt to accommodate a swivel-handle. Payne thought it a transitional type between the siren-attachments which were handles, and the later lead-filled animals which were not handles. See Filow, *Trebenischte* 53, Fig. 52; cf. also *Delphes* pl. X, 6.

[5] Bosanquet, *loc. cit.*, note 1. The reference should be Karo, *Archiv für Religionswissenschaft* viii *Beiheft*, p. 63. The reference is wrong also in Karo, *A.M.* 1920, p. 131, note 2. See Halbherr and Orsi in *Museo Italiano* II (1888).

The steering of tripods must have been a difficult business, the age of automata was not yet due and transport was facilitated by other means. Legs were not immediately made flat like the handles, but they gradually flattened and spread out, till the section formed three sides of a hollow rectangle or a double T shape.[3] Tripods with the latter section sometimes have the design broken by a panel at the top of the leg, a fashion which begins on tripods with a slightly earlier section. The use of panels on tripods preceded the onset of orientalism. The series of cast tripod-cauldrons breaks off before the orientalizing stage was reached, but that this stage was imminent is certain from *Delphes* no. 191, where the panel is filled with a ‘ potnia theron ’ and surrounded by a tongue pattern. From the photograph it is clear that this leg is rounded in front, but not that it is perfectly flat behind. It must have been attached to some flat object, to which it would give an illusion of roundness—perhaps to a relief. It cannot be earlier than the second quarter of the seventh century.[4] It is therefore clear that the latest legs had the lightest sections.

The following tripod-legs have panels:—*Ithaca* III no. 11; *Argive Heraeum* no. 2221; *Delphes* nos. 240–3; nos. 242, 243 at Delphi and some fragments may all belong to the same tripod. It is interesting to note that the panels are different and that there are half-panels on the sides (see my Pl. 24, no. 1). The wheel on *Delphes* no. 241 (my Pl. 24, no. 2) has four spokes,[5] not five as stated in the publication. The filling-ornament is curvilinear.[1] The tops of panelled tripods have decoration in fine lines,[2] sometimes in a maze form. Another common but not universal characteristic, found in *Delphes* no. 230 and other tripods of this type, is a sharp curve of the leg-plate, which involves a change in the shape of the cauldron. Such legs would be attached to very shallow bowls or to deep bowls like those on tripod-stands: see pp. 112, 126 below.

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[1] For the extreme antiquity of these see *I.L.N.*, June 9th, 1934 (ritual vessels from Ur).

[2] *Olympia* no. 503; *Delphes* no. 632; Candia Museum from the Idaean Cave, unnumbered. This wheel would suit the Idaean fragments much better than no. 280 (Karo, *loc. cit.*, no. 9), which has six spokes. Karo no. 2 has a four-spoked wheel, and a mixture of types is undesirable. The pyxis figured in *Argive Heraeum* ii Pl. lx, no. 19b (my Pl. 26, no. 2: see p. 105 below) gives an eight-spoked wheel on the handle like that of Hera’s chariot, Il. V. 723. The chariots of a ‘ prothesis vase ’ in New York have eight spokes (*A.J.A.* 1915 Pl. xxiii). Decorative wheels appear on the early handle *Delphes* no. 213, instead of stays, and have three fillets on the rim, like the Idaean wheel Candia Museum no. 280, Karo no. 9. It would be interesting to know something of the clusters of wheels with four, six, or eight spokes found near Pherae in Thessaly (Πρακτικά, 1907, p. 158). Can these Idaean fragments be regarded as strictly Geometric? The bear, cow and dog have the inside of their ears moulded (see p. 83 above); moreover, the pig, dog and bear are suspiciously naturalistic. See also p. 98 below. The figurines are of two different sizes, and the difference in size corresponds to a difference in style, so they may not all belong to the same object.

[3] *Ithaca* III nos. 10, 11 (see above p. 70, Fig. 19, Pls. 10*c*, 17*a* and *b*). Delphi inventory 2467 (my Fig. 8, no. 1; Pl. 19, no. 3).

[4] Cf. the wings of the runner on the aryballos in Boston, Payne, *Protokorinthische Vasenmalerei* Pl. xx no. 1. Similar tongue patterns occur earlier on the wide bellied aryballos Johansen Pl. iv nos. 1, 6.

[5] Cf. the wheel on the top of a clay tripod-leg from Perachora.

## CLASSIFICATION ADOPTED

Some flat handles with fillets[3] are proved to be among the earliest flat handles by their massiveness, by the primitive style of their figurines,[4] and by their association, in *Ithaca* III no. 3, with a simple leg-section.[5] Furtwängler attributed to these handle legs with narrow grooves,[6] or notches, on account of similarity of decoration: but the section of those legs is a double T, very different from the section of *Ithaca* III, no. 3. Sometimes contrast was evidently desired—straps only occasionally match handles, and in any case fillets do not really match grooves.

The conclusion to be drawn from this examination is that the cast tripod-cauldron evolved gradually. The evidence of *Ithaca* no. 3 (Pl. 14*d*) shews that Furtwängler was wrong in postulating a sudden invasion from outside of flat handles and legs, with new patterns. The patterns appeared first on round handles and on legs with a quite solid section. Flat handles were used while legs still had a solid section, so that the desire for flatness and lightness was probably necessitated by the growing size of tripods, rather than aroused by the vogue for hammered bronze.

As the classification by pattern has broken down, I have suggested the classification tabulated below, based on the section and also on the shape and size of legs and handles. The handle series was fixed primarily by the style of the enhancements: the latest enhancements were on the lightest handles. As the latest leg-patterns were on light sections, the other legs have been arranged according to section. I do not include hammered tripods in the list because their form is uncertain and I cannot prove that they are not tripod-stands. The general effect of concentric circles joined by spirals, and of tangential spirals is certainly similar, but when there was imitation, the hammered tripods were generally the imitators, for the following reasons: (1) their figurines, both men and horses, are typologically later than those of cast tripods; (2) while it is not likely that cast tripod-cauldrons were made at all after 700 B.C., bronze plates of the Olympian shape were still being made in the sixth[1] century, and the same patterns were still in use. (3) In Crete if hammered tripods with fillets were the prototypes of this decoration, they would have to be placed at the beginning of Furtwängler's class I; whereas they must be contemporary with the legs which they so closely resemble, and these are the Cretan equivalent of his class III (see p. 124 below and my Figs. 7, 7 and 10*b*).

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[1] In Cyprus this ornament had a great vogue and started early. See also Kunze, *Kretische Bronzereliefs*, p. 121.

[2] *Delphes* nos. 230, 239, 240, 241, 243. Olympia, an unpublished example.

[3] *E.g. Olympia* no. 625 (see the drawing Fig. 5*a*); *Ithaca* III no. 3 (section p. 70, Fig. 19).

[4] *E.g.* handle in Cassel (above, p. 86, Fig. 6); *Ithaca* III no. 3 (pp. 59, Pl. 13, 65, Fig. 15 above).

[5] See the sections, *Ithaca* III, p. 70, Fig. 19.

[6] *Ithaca* III, no. 10 (Pl. 10*e*); *Olympia* no. 622; *Delphes* no. 209.

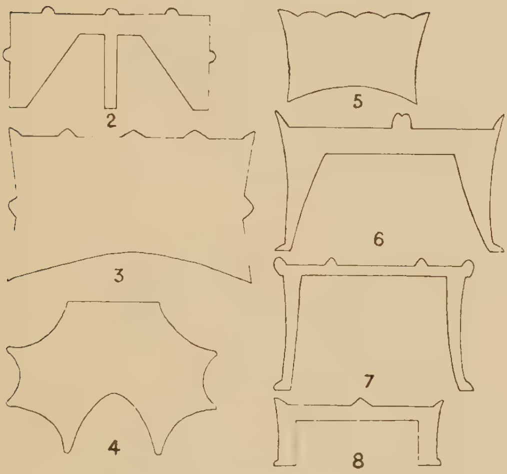

FIG. 7.—SECTIONS OF TRIPOD-LEGS WHICH HAVE FIGURINES; 2–3 AT DELPHI, 4–5 AT OLYMPIA, 6 IN LONDON, 7–8 AT CANDIA. Scale: 1–2.

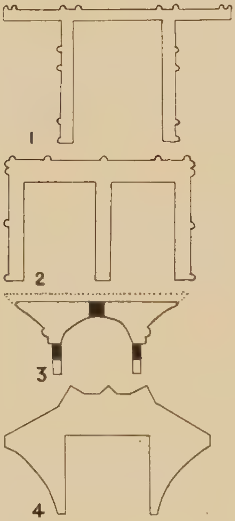

FIG. 8.—SECTIONS OF TRIPOD-LEGS; 1 IN DELPHI, 2–4 IN CRETE. IN NO. 3 THE DOTTED LINE REPRESENTS THE PART CUT AWAY.
Scale: 1 : 2.

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[1] Bather *JHS.* xiii p. 245; Schwendemann (*J.d.I.* 1921, p. 125) is sure that these are tripods. Some of them may have been from boxes. Payne gives evidence of the application of bronze plates to boxes at the end of the sixth century. *Necrocorinthia* p. 226; Bather, *loc. cit.* Fig. 25. The latter is not straight, and Professor Beazley pointed out to me that pedimental boxes were also made (Athens N.M. no. 1822: Papaspiridi *Guide* 141; Watzinger *Griechische Holzsarkophage* passim).

## CLASSIFIED LIST OF TRIPODS

### *a.* By Leg Sections

| | | | Handles. |
|---|---|---|---|
| *Class* 1. *Simple Section.* | | | |
| | (*a*) Small, tapering, simple section. | Ithaca 1, 2.<br>Delphi 193.<br>Tiryns 6230 (iron). | αa. |
| | (*b*) Large, tapering, simple section. | Palaíkastro 1343, 1344.<br>Anávlachos.<br>Olympia 548.<br>D. inven. 2467, 2852.<br>Delos B. 1195. | αb–d. |
| | (*c*) Tapering, slightly spreading or simple section. | O. 552, 553, 558, 554, 555.<br>Idaean Cave 1118. | βf. |
| | (*d*) Straight, slightly spreading or simple section. | I. 3–6.<br>O. 566, 557, 556, 560–3.<br>D. 198, 199.<br>Argive Heraeum 2218.<br>Lindos 743. | βa–c. |
| *Class* 2. *Complex Sections.* | | I. 7–9.<br>O. 559, 564, 565, 629, 630, 631.<br>D. 219, 232, 237, 220.<br>I.C. 1717, 1718, 107, 102, 92.<br>P. 848, 1336–1338.<br>Delos B. 1198, B. 1196, B. 236, B. 1198. | βc. |
| *Class* 3. *Double T, hollow rectangle, panels.* | | I. 10, 11.<br>O. 622, 626, 628, 632, 633.<br>D. 208, 209, inv. 3127.<br>A.H 2212.<br>I.C. 91, 1720, 201, 1716, 86, 97, 104, 1719, 100, 90, 1721, 1719, several not numbered, 100.<br>Praísos.<br>Athens.<br>Delos B. 1321, not numbered. | βd.<br>βg. |

### *b.* By Handle Sections

#### α. *Broad Section*

| | | Legs. |
|---|---|---|
| (*a*) Rounded 1, broad inside.[1] | I. 1, 2.<br>D. 216, 217. | 1a. |
| (*b*) Larger, same section: birds, bulls' heads; spirals. | O. 569–73.<br>D. 213. | |
| (*e*) Hollowed on the inside, | O. 568. | 1b. |

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[1] *E.g.* Fig. 5*e*.

| | | | *Legs.* |
|---|---|---|---|
| (*c*) Rounded 2, less broad inside:[1] horses begin. | O. 574 inv. 9952, 5449.<br>D. 216. | (*f*) Straight inside,<br>D. inv. 4435, 215. | 1c, d. |
| (*d*) Rounded 3, narrow inside:[2] bulls stop. | D. 214.<br>I.C. 1683. | (*g*) Broad notched,<br>O. 579.<br>I.C. 1663. | 1c, d. |
| | | (*h*) Stumpy, wedge-shaped,<br>O. 578, 578a, 580.<br>D. 218. | 1d. |

β. *Flat Section*

| | | | |
|---|---|---|---|
| (*a*) Fillets: horses common; groups? primitive men, alone. | I. 3.<br>O. 582, 624, etc.<br>D. 203–6.<br>A.H. 2222.<br>Arkades F. 1. | (*f*) Plain,<br>O. 581.<br>I.C. 1695. | 1d. |
| (*b*) Solid zigzags and spirals; groups. | I. 6.<br>O. 635.<br>D. 233. | | 1d. |
| (*c*) Open-work, heavy zigzags; groups. | I. 7, 9.<br>O. 638.<br>D. 220.<br>Sparta.<br>Palaíkastro 1345. | (*g*) Narrow notched, groups,<br>I. 12.<br>O. 623.<br>D. 234. | 1d, 2. |
| (*d*) Open-work, light zigzags; open-work spirals; lion; long-legged horse. | O. 639, 640, 641.<br>D. 227.<br>A.H. 2223, 2224.<br>At Athens. | | 3. |
| Open wedges; latest short-legged horse. | O. 636.<br>D. inv. 2450, 7967.<br>I.C. 112–15, several others.<br>Praísos 651.<br>Arkádes F. 2.<br>Lindos 742. | | 3. |

### *Association of Legs and Handles*

There are only three certain joins of legs and handles: (a) *Olympia* leg no. 562 and handle type of no. 579; (b) *Ithaca* III 3a, b; (c) *Ithaca* III 9a, b. *Ithaca* nos. 1 and 2 are almost certain, *Ithaca* no. 6 is extremely probable, *Ithaca* no. 7 more doubtful. It should be possible to achieve further co-ordinations at Olympia from the position of the rivet-holes. It ought to be possible to find a leg to fit the rivet-holes on cauldron no. 573 with the handle still attached, and the lost leg, said to be like no. 554a

[1] *E.g.* Fig. 3, no. 5.

[2] *E.g.* Fig. 3, no. 4*a*.

and to belong to the handle found attached to a cauldron and said to resemble two different handles, nos. 581 and 582. The cauldron no. 582a, Pl. xxvii has an everted rim, not elsewhere found with our tripods,[1] and the arrangement of the handle-rivets does not suit this type of handle. *Delphes* no. 212 (with a section like *Olympia* no. 582) and Furtwängler's reconstruction (Pl. xxxiv*b*), have quite different rivet-holes from 582a. Probably none of these handles belong to the cauldron 582a.

The leg at Delphi, inv. no. 3127, with a double T section, so exactly matches the open zigzags of a bit of a handle, and the solid zigzags of its strap, that they must be from the same tripod[2] (my Pl. 19, no. 3).

## *Height of Tripods*

With regard to the height of tripods at Olympia, it is confidently asserted[3] that these are known to have been 'over the height of a man.' The facts are as follows:—

Cast tripods, longest extant leg ·96 m. *Olympia*, no. 629.
Hammered tripods, ,, ,, ,, ·73 m. *Olympia*, no. 10296 (see no. 600).

Nothing whatever is known about the proportions of these tripods, and the reconstruction of a leg of 1·70 m. is pure conjecture. It is quite certain that tripods over the height of a man could not be carried about when full, by means of bars on men's shoulders. (On the Amphiaraos[4] vase two tripods are certainly of this nature.)

*Delphes* no. 236, by the way, is not part of a tripod. One fragment of the top is complete, and there is a nail in it. The upper part above the ridge must have gone into a slot, and the hook in front was then secured by a bar (my Fig. 5*d*). It may be a table leg (cf. the shape of the Olympia leg with a Daedalic protome).[5] The pattern of the Delphi leg, however, is not of the seventh century, but Mycenaean,[6] though its regular and schematic application is of the Geometric age.

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[1] In fact, it will not accommodate either legs or handles in the orthodox way. Besides interrupting the simple lines of the composition, it will put the great strain of the weight of the tripod on the basin and not on the rim especially thickened for the purpose (*Ithaca* III, Pl. 69, Fig. 18*a–c*; also p. 77 above, 123 below).

[2] Note that the foot is slightly rounded, like Ithaca no. 9.

[3] By Schwendemann, Lamb, Tosti.

[4] See below p. 103 Payne *op. cit.*, no. 1471; *F.R.* 111, Pl. 121; Pfuhl, Fig. 179.

[5] *Olympia* no. 857 Pl. 21. The resemblance is not very close. Better, perhaps, Carapanos *Dodone* Pl. xli. 3; cf. also De Ridder, *Acr.*, no. 62, which has the same engraved decoration as *Delphes* no. 189; for later examples, cf. the marble table-leg at Delphi (Richter *Ancient Furniture* fig. 206 a, b). The examples given by Miss Richter shew that such legs were in use in the late archaic and early classical periods.

[6] Cf. *Schachtgräber* Pl. lv, p. 279; Murray *Cyprus* Pl. xii, 462.

### Figurines and Fittings

The list of figurines affixed to tripod-legs (Pls. 22 and 23, Figs. 7, 9, 10*a*) is as follows:—

1. The bull's head on the inside of *Ithaca* III no. 3 (Pls. 11*a* and 15*a*) is the first of these to be noticed. Both horns are broken. The planes are less flat than those of the heads on handles; and there is a good deal of modelling about the eyes. It must have been very much in the way of the sticks of the fire if this tripod was ever used for serious business, and it probably was, as the many layers on the inside of the plate may indicate the wearing-out of successive basins. The animal-heads on the Tiryns tripod-stand[1] shew a completely different and naturalistic spirit. Lack of definition and the ill-chosen position result in complete formlessness. Contrast the six heads from Cyprus in New York,[2] which were affixed three at the top of the legs, and three at the top of the spandrils. The Ithacan head compares not unfavourably with these archaic[3] works, but other Geometric experiments in this direction were less successful.

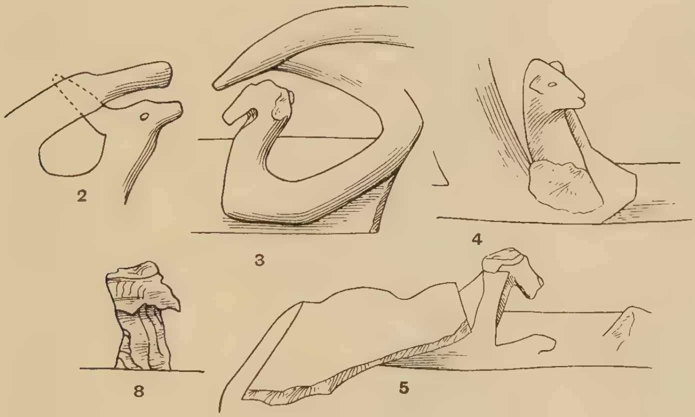

Fig. 9.—Enhancements of Tripod-Legs, Nos. 2, 3, 4, 8, 5.
Scale: 1 : 2.

The chief reason why these curious beasts have not been noticed is that most of them are uncleaned, which makes their reproduction a matter of the greatest difficulty and a discussion of their style impossible.

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[1] Karo *A.M.* lv. 1930, Beilage xxxiii, p. 131. I believe this to be an import from Cyprus. Cf. the tripods figured in Gjerstad *Prehistoric Cyprus*, p. 238. They are said to come from Kourios with Mycenaean objects (Markides, *B.S.A.*, xviii, p. 95, Pl. viii), but see Buxton and others in *Man*, 1932, 1.

[2] Richter *Bronzes* 1182–7.

[3] Surely seventh century, not eighth or ninth, with their schematic nostrils and eyebrows? Cf. those from Sparta, Lamb Pl. xxiii, p. 77 (dated to the end of the seventh century).

2. *Delphes* no. 232[1] (my Pl. 23, no. 1). Spirals in front, inscribed semicircles on the side. Its section (my Fig. 7) approximates to that of *Ithaca* no. 9. The struts are much lower than in *Ithaca* no. 3, and the plate has crashed down on the creature's horns. It is certainly a bull's head. This leg is much bent.

3. Delphi, unnumbered and uncatalogued. L. ·36 m., W. ·064 m. (my Pl. 23, no. 2). Early section (see my Fig. 7). Fillets. The creature may be a horse. The head is like that of the Delphi 'camel,'[2] (my Pl. 23, no. 4). If the resemblance is not fortuitous, this is an instance of a very rare contact with cauldron-attachments.

4. Olympia.[3] Complete leg, L. ·68 m. (my Pl. 22, no. 1) fairly plain section, may have had fillets. Head of an uncertain animal, perhaps a ram; it has ears, eyes and nostrils. See Fig. 9.

5. Olympia, uncatalogued, incomplete, L. ·225 m. (my Pl. 22, no. 2).[4] Piece of a small leg; simple section; decoration, four fillets. A lion with paw raised, confronted by a second animal. The lion is made in a number of flat planes, and the cauldron rested on the flat spot on its head.

6. London.[5] L. ·36 m., W. ·045–·065 m. (my Pl. 23, no. 5, Fig. 10*a*) probably from Palaíkastro. It has a fillet down each side and a double fillet not quite in the middle. The section is of a late type frequent in Crete, three sides of a hollow rectangle with pointed ends. The leg expands below. At the end of a broken strut is a calf's head without horns.[6] The leg is in good preservation. I publish it by kind permission of the Museum Authorities.

7. There is the top of a similar leg (L. ·48 m., W. ·05 m.), from the Idaean Cave, in Candia Museum (no. 86, Pl. 23, no. 3). This belongs to a tripod with a slightly different section but with a similar figurine.

8. Candia Museum No. 1720 from the Idaean Cave. L. ·195 m., W. ·044 m. (my Pl. 22, no. 4). This appears to be a man's head, bearded and with upturned face like *Ithaca* no. 15, but it is so corroded and formless that I hesitate to add it to the list. See Fig. 9.

A kind of daisy, like that on *Ithaca* III no. 9 (Pl. 11*c*) is a very common decoration on the inside of tripod legs; cf. also the zigzags sometimes found in this position.[7] The whole series is an unexpected anticipation of the flamboyant zoomorphism of the seventh and sixth centuries. Geometric art is less thrifty than some had supposed. Clearly, this is the beginning of the kind of decoration which reaches its height in the tripod found at Trebenischte.[1]

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[1] This is not a companion leg to no. 231, as the publication suggests; it has a different decoration.

[2] *Delphes* p. 84 no. 382, an attachment of the 'siren' type. See Kunze *Kretische Bronze-reliefs* p. 267.

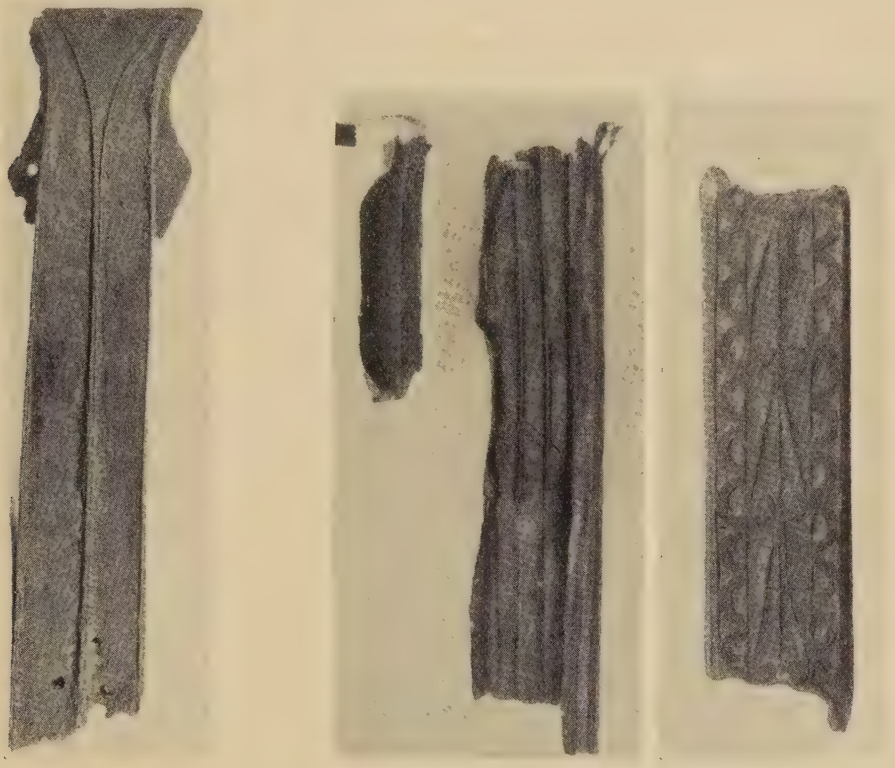
[3] Like *Olympia* no. 554. The front is now corroded; it may have had grooves; perhaps inv. 2766.

[4] See below, p. 115.

[5] 1907. 1–19, 233.

[6] Mr. Forsdyke compares the hornless beast on Cretan seals, *B.S.A.* xxviii p. 288 Fig. 40.

[7] *Olympia* no. 563, Pl. xxviii; 634, p. 92. See also *Delphes* no. 210, Fig. 193*a*.



*a.* *b.* *c.*

FIG. 10.—FRAGMENTS OF TRIPOD LEGS; *a*, IN LONDON; *b*, *c*, IN CRETE.
Scale: *a*, 1 : 4; *b*, 3 : 5; *c*, 2 : 5.

Figurines on tripod legs afford little evidence for dating. They had a considerable vogue, and occurred at intervals throughout the series.

### *Attachment of Figurines*

Figurines attached to tripods are generally cast. I only know one figurine which can have been made directly from wire or a bar[2] (my Fig. 5*c*), and Mr. Casson's theory of 'bar technique'[1] will have to be modified in consequence. Its usefulness has largely disappeared, for it would be absurd to suppose that a metal-worker who was expert enough to cast the leg and handle of *Ithaca* III no. 9, Fig. 17, was reduced to 'bar technique' for the horse; and the horse cited by Mr. Casson[2] (Fig. 1) is at least not more primitive than that of *Ithaca* III no. 9*b* (Pl. 15*c*).

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[1] Vulič, *Arch. Anz.* 1933, p. 467.

[2] On a handle, Candia Museum 112, from the Idaean cave. The handle has open wedges (cf. the Ashmolean handle, my Pl. 20, no. 1).

The cutting required by 'bar technique' is suitable to sheet bronze (*Olympia* nos. 90–105).[3] Fusing has taken place in no. 111, and neither method produces satisfactory animals. Excellent works like the Dodona figure[4] or the best Olympia horses[5] could not be cut out of bars. The preliminary cutting would have been the labour of a lifetime, and most wasteful, for bronze arms will not bend much with safety.

An examination of the attachment of figurines may hasten the recognition of the types. To start with the horses, which provide the widest range of material, Furtwängler states that certain later horses (e.g. *Olympia* nos. 624, 640) were cast with the handles, but says nothing about the attachment of bulls' heads and birds. Perhaps he considered that an obvious matter. In the case of things that are obviously cast together like the spokes and rim of the wheel (my Pl. 19, no. 4), each has its own value; its boundaries are sharply defined. Contrast the behaviour of the horse's feet and tail, *Ithaca* III no. 6 (Pl. 15*b*). They do not rest on the handle, they melt into it, like the feet of the animals in the fragments[6] from the Idaean Cave. May they not be attached in the same way, *i.e.*, soldered together? All the feet on the Idaean fragments seem to have been soldered, and the effect of soldering[7] can be estimated by comparing the head of the man on Karo, no. 2, with its clear definition, and the blurred head of the man on the lower side of no. 1; or the head of the horse on no. 2, with that of the animal on no. 4. Preparation for a soldered figurine would explain the irregular holes in the rim of three unpublished handles at Olympia and those in the handle of *Ithaca* no. 3, one of which fits the base of a statuette.[1] On an early handle at Delphi (see p. 83 above) part of the stand for the horse was soldered above the fillets, and two new fillets were set over the stand.

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[1] *JHS.*, XLII, p. 207 ff. The example of 'bar technique' given by Mr. Casson (p. 208, foot) is the Dodona statuette (*op. cit.* Fig. 6, my Pl. 21). The sixth century statuette shewn (Casson Fig. 5) does not retain 'the shape and outline of the "bar technique."'

[2] Zervos 53; see references on p. 84 above.

[3] These animals are, no doubt, the earliest experiments in working sheet-bronze, but there is no evidence that they are earlier than all cast animals. Some 'cut-outs' belong to the seventh century (Lamb, p. 59, 3). Neugebauer Katalog no. 6 is a well-finished example of a 'cut-out.' Tail and nose added, the rest cut out of a sheet of bronze. Cf. *Delphes* no. 134, p. 47, Olympia no. 222, Pl. xiv. These cut-out horses on stands are probably just a little later than the cast horses on hammered tripods; see p. 116 n. 6 below.

[4] My Pl. 21; cf. Pl. 20, no. 2.

[5] Zervos, Fig. 53.

[6] Best illustrated by Karo *Archiv für Relig.* viii, *Beiheft* p. 65.

[7] The time has surely come for further study of this important monument. I give a few corrections and a suggestion. The warriors wear helmets, not caps (see Halbherr, p. 41). The animal in Karo's Fig. 1 (Halbherr, p. 42) is of course being milked, not suckling (see Benton, *B.S.A.* xxxii p. 214, note 3). Karo has shewn that the second figure in his Fig. 1 is a woman, not an image, but there is nothing to shew that she is a prisoner (cf. the attitude of the woman on the early orientalizing Cretan vase, *B.S.A.* xxix Pl. xi no. 11). Might it not be Menelaos and Helen passing Crete on the way to Egypt, or, better

Another method seems to have been used in the Ashmolean handle. There is no trace of fusing at the top of the handle, which has its full value. The feet of the horse are flattened spatules, clearly differentiated from the metal of the handle, but clipping neatly on to it. Mr. Leeds thinks that the horse has been cast on to the handle. This view is strengthened by the attachment of the horse belonging to the other handle at Candia (my Pl. 21, no. 6), which has, however, carried a bit of the handle away with it. Both horses are hackled[2] by a thin band of metal. A horse at Delphi (*Delphes*, no. 131, p. 49) was also probably cast on. His feet appear to be pierced in the official photograph,[3] but not on the object (see my Pl. 18, no. 5). Add the horse on the handle at Athens (my Pl. 19, no. 1) and *Olympia* no. 640. When, however, handle and horse are involved in blurs of metal, as in the case of the horse in Cassel (my Fig. 6), *Olympia*, no. 624; *Ithaca* III, nos.

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still, Ariadne and Theseus starting off for Athens, looking towards the cattle on the high slopes of Ida, while a bird looks down on them from the branches of the trees?

Karo suggested a four-wheeled vehicle, but the corner figure (his Fig. 7) would suit a triangular vessel better. As there are wheeled tripod-cauldrons, why should there not be wheeled tripod-stands? For my suggestion of a vehicle for an object from Velestino, and also for Italian contacts, see p. 120 below. I cannot agree with Mr. Casson that all these figurines have been cast in a flat mould (*Technique*, p. 47). The group of two warriors where a shield appears in front and legs and necks behind could not be so produced. Moreover, what of the little corner figure sitting on spandrils going off at an angle (Karo no. 7)?

Furtwängler thought that *Olympia* no. 231 was a throw-out. Was the furnace in the middle of the sanctuary that so many failures appear among the dedications? Neugebauer's suggestion of a sale of cheap failures is not altogether satisfactory (*Bronzen* no. 132). *Olympia* no. 231 may be a fragment of a horse from another soldered tripod, with good hindquarters and a wreck where the soldering came away. It might be worth while to examine nos. 227–9 and Neugebauer no. 132 to see whether they may belong to the same monument; cf. the later fragment *Olympia* no. 1282, which may be part of a candelabrum (see the example in the British Museum from Kourion, Murray, Fig. 89, p. 67 from tomb 73). Neugebauer no. 134 was part of a chariot group, cf. *Olympia* no. 254*a*, Pl. xiv.

[1] See *Ithaca*, III p. 59.

[2] For hackles cf. *B.M. Bronzes*, no. 176, from Rhodes. The legs of the Rhodes horse have been soldered on.

[3] *Loc. cit.* Fig. 154.

6 (Pl. 15*b*) and 7, *Delphes*, no. 133 (my Pl. 18, no. 4)[1] soldering of some sort must have taken place. The horse on *Ithaca* III, no. 9 (Pl. 15*c*), on the other hand, and a horse on a flat plain handle from the Idaean cave, no. 1695 (my Pl. 24, no. 3), may have been cast with the handle.

Cast horses had, of course, to be riveted on to hammered tripods, and these horses have a fairly distinct type (p. 84 above). It is certain that riveting was used on cast tripods too, because of the neat holes drilled one above the other in two handles at Delphi and Olympia[2] (my Fig. 5*a*) of the same type as *Ithaca*, III, no. 3[3] (Pl. 13*a*). On each of these two sites there was found a warrior on a tang bored in this fashion.[4] At Delphi the holes of the tang were bigger than those of the handle. This is not, however, an insuperable objection to the attribution. The tang was probably masked in some way, and a little solder would put the discrepancy right. The Delphi statuette has already been included in our class of tripod-figures[5] on grounds of style, but he differs from the others in standing straighter. The Olympia figure is a little more primitive, but a very primitive horse belongs to this type of handle.[6]

The feet of the groom on a handle at Delphi (*Delphes*, no. 234), rest very lightly; perhaps there was a peg and some adhesive mixture. The calf of his leg is well moulded, and if he is to be as elaborate as the other figures of the class, he can hardly have been cast with the handle. The groom suggested for the handle of *Delphes* no. 233 would have had a similar attachment.

The handle (*Delphes* no. 214), had a four-footed animal on the inside. An indication of this is just visible on the official photograph[7] (see the plan given on my Fig. 3, no. 7*a*). There are two bulls at Delphi which seem to correspond to this plan. An animal in this position would be much in the way when the pot was to be lifted off the fire, but there would be no strain on the animal's feet, which are comfortably placed on a broad stance. On the handle *Ithaca* III, no. 6 (Pl. 13*c*) there are three very faint marks, one of which fits the extant foot of the bull no. 18[8] (*id.* Pl. 14*a*). Bulls are much more liable to retain possession of their hooves than horses, partly perhaps because this method of attachment was considered suitable to them.

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[1] It probably belongs to an open-work tripod-handle. In style it is like *Delphes* no. 131 (my Pl. 18, no. 5), and the horse at Athens (my Pl. 19, no. 1). Like the Ithaca horses it is pulling back.

[2] About a quarter of the handle remains. Note how the ornamentation stops to receive the tang.

[3] Contrast the irregular cuttings and tearings in another handle of this type at Olympia. See also the neat rivet-holes in Olympia nos. 579, 580 (Pl. xxx).

[4] *Olympia* no. 246, Neugebauer no. 13, in Berlin; *Delphes* Pl. ii no. 6. Prof. Neugebauer does not consider the attribution of the statue at Olympia to the handle possible, but I should like further information before abandoning hope.

[5] See list on p. 86 above; also p. 85.

[6] The horse in Cassel (see above, p. 86 Fig. 6*a*).

[7] *Delphes* Fig. 197[1], p. 63.

[8] See also the reconstruction p. 66 Fig. 16*a*.

The hole bored in the back of the horse *Ithaca* III, no. 17 (Pl. 15*d*) must have held a stand supporting a bird.[1] Flocks of suitable birds exist,[2] but not many have been published. *Delphes* no. 214 (mentioned above), has a little stand on the top, which may fit the eagle no. 120, p. 47 (see my Pl. 21, nos. 4 and 5) no. 119 is similar. An eagle is a peculiarly interesting bird to find on a tripod-handle at Delphi. Note also *Delphes* no. 118, with reverted head and the same mounting.[3] The birds directly on handles sit pretty lightly upon them, and a good many stray birds may belong to the many undecorated, early handles at Olympia.

The bulls' heads[4] (my Pl. 18, Fig. 3) are certainly firmly established, but some of them have an indefinite kind of shirt-front running down in front and a vague collar behind. Probably a hole was drilled and the stand of the head inserted and soldered in position.[5] Such a technique suits early handles with a broad section, but not late, flat handles.

To sum up, in the earliest handles the general practice was to employ a rather clumsy kind of soldering. Casting on, casting with, and rivetting were substituted later. All these gave effect to the Greek desire for clear definition and allowed a whole animal to be set on a whole handle.

Animals in Italy, like some of the animals on the Idaean fragments, are made to be seen in silhouette,[6] with two legs only. Tripod horses have four legs even if they are joined together. The horse on the late, flat handle from the Idaean Cave (my Pl. 24, no. 3) has, however, only two.

## ABSOLUTE CHRONOLOGY BASED ON REPRESENTATIONS OF TRIPODS

### *A List of Representations*

*Protogeometric*.[7]

1 and 2. Fig. 16. Protogeometric clay tripod found in a grave in the Kerameikos. Its date is certain from the form of the decoration—check-

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[1] Cf. *Olympia* no. 240, in Athens (which is much more beautiful than the drawing).

[2] *Argive Heraeum* II, Bronzes, no. 37; Athens, no. 7739 (this seems to have a bit of handle still attached); no. 7861.

[3] Cf. the eagle (not a pigeon) Halbherr, p. 59, no. 7; also the monuments quoted by A. B. Cook, *Zeus* ii, 180 ff. Add also the eagles on the handles of the Axos mitra.

[4] See p. 82 above.

[5] Cf. the attachment of the bulls' heads on the Tiryns tripod-stand (Karo A.M. 1930 Pl. xxxiii). Clearly these have been soldered in at the join of the spandrils, see p. 95. Cf. also the animal's heads on the tripods figured by Gjerstad, *Prehistoric Cyprus* p. 238.

[6] See the Capodimonte brazier (*Not. dei Scavi*. 1928 p. 443 Fig. 14). On bridle bits Montelius *Civ.* ii Pl. 364, no. 11. On brooches *id.* Pl. 196, no. 4. On tripods *id.* Pl. 291, no. 15.

[7] *A.A.* 1935, p. 285, abb. 15.

board, and concentric semi-circles with solid centres; grooves on the legs. The legs do not actually reach to the rim, but painted lines from leg to rim hint that they are meant to do so. Well-defined struts. Part of the vertical ring-handle has coalesced with the rim, and at this point there is a loop. The curve of the bowl is the same as in that of the Stais tripod (my Fig. 1*a*).

3. Protogeometric clay tripod from the Protogeometric cairns of Aetos,[1] Ithaca. Legs on the rim, and the tripod is therefore probably later than the last: curve of the bowl as in *Ithaca* III nos. 1 and 2 (above p. 64, Fig. 14).

*Geometric.*

Thanks to the German excavations in the Kerameikos, the order of the earlier stages of Attic Geometric vase-painting is not in doubt. Dr. Kraiker [2] has proved that the earliest stage is the 'dark Dipylon' style (1) and stratified above it he has found a grave containing vases of the 'severe frieze' [3] style (2) and above that another containing vases of the 'metope' [4] style (3). The 'severe prothesis' vase style [5] is contemporary with the 'severe frieze' style, though perhaps not with its beginning. The 'severe prothesis' style is followed by a figure style [6] which is partly in outline, at the end of which oriental motives begin to appear.

What is not known is when the first style began and how long the second style lasted. In trying to arrange and date the following list I have had the help of Professor Beazley, Mr. Kahane and Dr. Kunze, and we are all agreed that it is still experimental. On new evidence from the Kerameikos,[7] Mr. Kahane has persuaded me to adopt a considerably lower dating than that hitherto accepted.

1. Fragment of an Attic Geometric krater in the Louvre.[8] Group of the severe 'prothesis' amphora.[9] Early eighth century. The men have dark heads. Dots below the bowl may indicate struts, and on the pot, handle-straps. The handles themselves are lost, but these are certainly tripod-cauldrons. This vase must represent a great Homeric funeral, and no doubt the massed tripods are the prizes for distribution, as

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[1] Heurtley *B.S.A.* 1933 pp. 51 and 52, nos. 88 and 95. I agree with Mr. Heurtley that these fragments probably belong to the same tripod; the clay is similar, and the dimensions correspond, but I accept Miss Lorimer's dating (*B.S.A.* 1934, errata sheet before p. 1).

[2] Kraiker *Arch. Anz.* 1934, pp. 236 ff., abb. 25.

[3] *Op. cit.* abb. 28, p. 240, foot.

[4] *Id.* abb. 30, p. 243, top.

[5] Pfuhl Fig. 10.

[6] Schweitzer *Ath. Mitt.* 1918 p. 105.

[7] See Hampe *Frühe Griechische Sagenbilder*, p. 37. All Mr. Hampe's conclusions cannot be accepted as they stand. See below p. 117.

[8] Pottier, Pl. 20.

[9] Athens, no. 804; Pfuhl, Fig. 10.

on the later Amphiaraos [1] vase, and others of the sixth century.[2] Probably the tripods on nos. 9 and 10 have a similar meaning.[3]

2. Attic Geometric amphora in the Empedokles collection, Athens (my Pl. 25, no. 2) h. ·32 m. I publish this vase, and also nos. 9, 10, 16 below, by kind permission of the owner. On neck, two horses tethered to a tripod with solid legs. On lip, solid tangential circles. Same general style as No. 1.[4] Second quarter of the eighth century.

3. Attic Geometric krater in New York.[5] Second quarter of the eighth century. Tripod at funeral games. Cauldron hatched. Legs have a line of dots on each side. The rest of the vase is carefully done, but the tripod is rather careless. Men's heads in outline. A funerary vase.

The remaining Geometric vases belong to the second half of the eighth century.

4. Attic Geometric amphora in Dresden.[6] Tripod between horses on the neck. Rim of the tripod rounded [7] into a queer shape. Birds on the handles [8]; two strokes with hatching between [9] for legs.

5. Attic Geometric cup in Athens.[10] The women have chequered dresses. Eight tripods on the outside between metopes. Three strokes for tripod-legs.

6. Attic Geometric oinochoe in London (my Fig. 11*a*). I publish this vase by kind permission of the authorities. Concentric circle group.[11]

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[1] Payne no. 1471; *F.R.* Pl. 122. Note the two sizes of tripods.

[2] Thiersch, '*Tyrrhenische*' *Amphoren* Pl. ii 2 and 4; Graef Pl. xli no. 654*b* (see below, p. 127).

[3] See below, p. 114.

[4] Cf. the earlier and very beautiful Revelstoke amphora illustrated in *I.L.N.* March 16th, 1935, p. 442, Fig. 4. Slim and long-necked shape. The New York vase no. 3 below surely commemorates a victory won by the dead man (cf. an amphora resembling Panathenaic amphorae in London, *C.V.A.* iii H.e., Pl. 6, 2*b*). The symbol of victory must mean more than a general interest in racing.

[5] Richter in *A.J.A.* 1915 Pl. xxiii Vase A.

[6] Albertinum ZV. 1820; *Arch. Anz.* 1902 p. 114 no. 17. I owe my knowledge of this vase and of nos. 8, 14, 17, 18 to Dr. Kunze.

[7] It is quite usual on Geometric vases to look at an object from two directions, and to see two sides of a rectangle. On the same principle, I believe, the painter is trying to look half-way round the vase. Cf. nos. 3, 8, 11, 13, 15, 17, 18, 19; see also a kantharos treated in the same way, on a kantharos found in Samos (*Ath. Mitt.* lviii 1933, beil. xxix) and said to belong to the end of the eighth century.

[8] Cf. no. 13, p. 105 below.

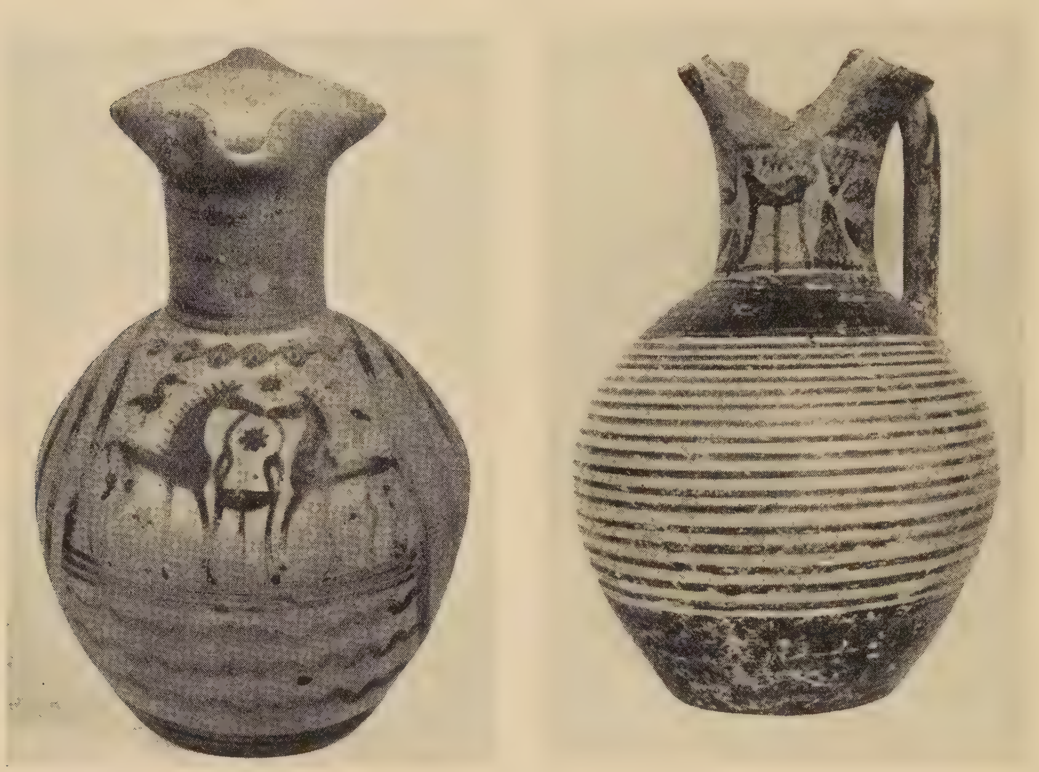
[9] Cf. no. 23, p. 106 below and Fig. 13*a*.

[10] No. 874, Collignon-Couve, no. 350, Pl. xv; Zervos, Fig. 47.

[11] Group of Schweitzer, *Ath. Mitt.*, 1917–18, Pl. v, 2. Other objects can be put on three legs. Mangers with horses are common. (*a*) On a kantharos in the Ashmolean Museum (1929, 25) a horse and a bird scatter grain beside a portable wooden manger, stabilized with bars. (*b*) Athens, no. 193 (Collignon-Couve no. 242, Pl. xiii, there called a tripod). (*c*) Probably the square objects on four legs, on Argive Geometric vases connected with horses (*e.g. Tiryns* I, Pl. xv 1), and perhaps those on one leg (*ibid.*

Two horses beside a tripod with bent, solid legs. Rather severe and simple. On the back, two sets of large concentric circles.

7. Oinochoe in a private collection in England (my Figs. 11*b*, 12), h. ·22 m. Same group. Tangential circles on the handles. On the neck two tripods between two shields, rim and handles of the outside tripod lost: its legs are in outline, those of the other tripod, in silhouette. This may not indicate any structural difference. The picture recalls the late 'prothesis amphorae'[1] and may represent miscellaneous funeral gear.



*a.* *b.*

FIG. 11.—GEOMETRIC OINOCHOE, *a*, No. 8, *b*, No. 9: *a*, IN LONDON; *b*, IN THE MARKET. Scale: *a*, c. 2 : 5; *b*, c. 3 : 7.

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no. 1), under horses on Argive Geometric vases are also mangers. Cf. Beazley in *JHS.* 54, p. 91, left top. (*d*) On two oinochoe in London of the same class as no. 8. (*e*) At Eleusis (Wide, *J.d.I.* 1899, p. 194, fig. 57). (*f*) At Delos (*Delos* xv p. 87, 6). (*g*) Parian amphora (De Ridder, *Vases peints de la Bibliothèque Nationale*, Pl. 1, 25). Other three-legged objects are thrones (*C.V.A. Denmark* 111. H Pl. 72, 2) and a stool (at the feet of the divinity on a cup in Athens, *Ath. Mitt.* 1893 p. 113).

[1] Cf. *J.d.I.* 1887 p. 54 Fig. 17 (Prof. Beazley's reference).

8. Attic Geometric oinochoe in Munich.[1] A tripod between two horses, dot-rosettes, groups of lines and spaces, one line for tripod legs. This is an extreme example of the shape of tripod noted first on No. 4.

9. Attic Geometric amphora in the Empedokles collection in Athens. h. ·30 m. (my Pl. 25, no. 2). The neck has been repainted on the reverse. Eight tripod-cauldrons on the neck,[2] a bird in each. For the shape cf. Hampe, *op. cit.*, p. 37. The lid may not belong. On the handle, St. Andrew's Cross.

10. Attic kantharos in the Empedokles collection (my Pl. 26, no. 3) h. ·115 m. Six tripods set in metopes round the rim; a large reserved space below.

11. Boetian Geometric sherd in Sarajevo,[3] probably from Thebes.

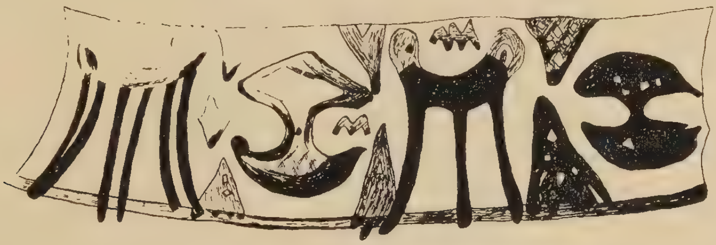

Fig. 12.—From Neck of Oinochoe No. 9, Fig. 11*b*.
Scale: c. 2 : 5.

Two boxers in front of a tripod. For the shape of the cauldron see no. 6. Three strokes for legs, cross hatching between the legs.

12. Geometric sherd in Athens,[4] from the Acropolis (my Fig. 13*b*).

There is little to date this sherd exactly. It has wheels with four spokes, for handles. The authors think that it has three handles, which in itself is a negation of function. Wheels are sometimes found on classical tripods instead of handles.[5] Three lines for tripod-legs. The rim of the tripod does not seem to be quite normal; it has an everted look. Between the legs, two crested birds (herons?). Probably a dedication.

13. Fragment of an Argive Geometric pyxis from the Argive Heraeum,[6] in Athens (my Pl. 26, no. 2).

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[1] Inv. 6249.

[2] For massed tripods, cf. nos. 1, 2, 5. For the significance, see on no. 5 and p. 75.

[3] See p. 75 above. If the cross-hatching does not represent sticks, has this tripod-cauldron turned into a tripod-stand or a portable stove? For boxers and tripods on vases see pp. 75 above, 107–109 below.

[4] Graef, Pl. 10, no. 298.

[5] *E.g.* a Kylix from Vulci by the Codrus Painter, in Berlin (*F.R.* Pl. 140).

[6] *Argive Heraeum* ii, Pl. lx, 19*b*. For the shape, cf. the Corinthian Geometric pyxis with birds from Aetos, *ILN.* January 14, 1933, p. 47, Fig. 3 (top left). The mark on the tripod-leg is accidental. Photograph by Mr. R. M. Cook.

The other fragments with the number 19 are said to belong to the same vase; ‘ h ’ is lost, but comes from a pyxis with a flat bottom, and ‘ f ’ looks like the lower side of a plate. An eight-spoked wheel is an oriental touch, and a wheel instead of a handle shews that the vessel cannot be lifted off the fire in the orthodox way. Horses on the handles.[1] The helmet is very well drawn and the shape of the tripod is like that of no. 6 above. There is also a selection of the furniture required at an athletic meeting, including the sacrificial knife. Two lines for tripod legs.

14. Attic Geometric amphora in Berlin.[2] H. ·435 m. Excellent drawing. Two horses and a tripod [3] on the neck, a fox-hunt on the shoulder. Workman-like tripod with one stroke for legs. Very close to no. 15.

15. Attic Geometric amphora in Athens which I publish by kind permission of the authorities (my Pl. 26, no. 1) h. ·42 m. Much broken, two bits missing, paint rather worn. Drawing good. On the shoulder, a fox-hunt, and on the reverse a hare-hunt (cf. no. 14: the chief differences are: (1) a frieze of birds instead of lozenges; (2) the shape of the tripod, which is much as in no. 4). Four lines of dots hang from the handles: are these fillets? [4]

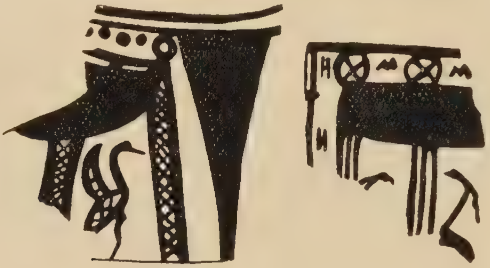
*a.* *b.*

Fig. 13.—Fragments in Athens, *a*, No. 23 from Eretria; *b*, No. 12 from the Acropolis. Scale: 1 : 2.

16. Attic Geometric oinochoe in the Empedokles collection Athens (my Pl. 25) h. ·23 m. Horses and tripod; similar to the last, but two strokes for tripod-legs. A filling half-lozenge sits on the tripod. On the

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[1] Cf. no. 4, p. 103 above. See also p. 83, n. 4.

[2] Inv. 31·005. Neugebauer *Führer* p. 7.

[3] There called a manger, but it certainly represents a metal tripod. Contrast the mangers cited under no. 8 above. Neugebauer omits the fox and mentions a hare which must be on the reverse (see no. 15 below; also no. 16). Cf. a hare-hunt on an oinochoe in Copenhagen (*C.V.A.* iii. H. Pl. 73, 4). The amphora in Oxford 1935, 18 has both hare-hunt and fox-hunt.

[4] Cf. garlands on coins, *e.g.* B.M. Troas, p. 168, no. 118 (‘440–350 B.C.’). Pausanias V. xii. 5 relates that at one period the fillets for the victors hung on a tripod in the temple of Zeus at Olympia.

shoulder a hare-hunt. Drawing more careless than the last, but the vase is probably of about the same date.

17. Attic Geometric kantharos in Munich.[1] Two horses beside a tripod from which rises a row of dots; reserved space below. Solid legs. This tripod is thick and heavy, but sags like that on no. 4.

18. Attic Geometric three-handled cup with trefoil-lip in Athens. One horse beside a tripod with solid legs. Shape of tripod as that of no. 4. I mention this vase by kind permission of the authorities.

19. Cretan Geometric lid from Knossos.[2]

'Zeus thundering' beside a tripod; beneath the tripod, a head, perhaps Hephaistos waiting to boil the pot. Geese walking about ready for the victory feast. Solid tripod-legs, but Hephaistos' head is in outline. Funerary.

20. Argive Geometric sherd from the Argive Heraeum.[3] Boxers with dark heads beside a deep tripod with solid legs. A dedication (cf. no. 11).

21. Late Geometric brooch from Boeotia.[4] Two horses beside a tripod whose legs bend and taper. Dr. Reisinger[2] said that the legs were joined by supports, and Dr. Doro Levi[5] agreed with him. Therefore it is not a tripod-lebes that can be set on the fire, but a contamination of two types, the tripod-lebes and the tripod-stand.

22. Plastic lid in Candia,[6] belonging to a polychrome Cretan pithos. In the form of a tripod-cauldron, but the use of the lid as a filler necessitated a support in the middle, so that it does not afford conclusive evidence for the form of tripods not so supported; yet the general impression made by it is that of a tripod with hammered legs. There are other reasons for attributing a dinos bowl to this kind of tripod.[7] Dated by Payne not much before the end of the eighth century.

23. Eretrian Geometric krater from Eretria[8] (my Fig. 13*a*). Late eighth century. The double row of rays shews that we are already in the Orientalizing period. There is some kind of erection on the rim and also above it. This is the earliest 'upper-deck.' Legs have grown more

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[1] Inv. no. 6202.

[2] *JHS.* 1933 p. 295.

[3] *Argive Heraeum* ii Pl. lvii 11.

[4] *J.d.I.* 1916 p. 297 (see p. 110). Professor Weickert most kindly tells me that two supports are clearly visible, but that what Dr. Levi thought was a ring is a hole in the bronze. In Montelius, *La Grece Préclassique* I, Pl. 22, 4, this brooch is wrongly drawn. Hampe (*Frühe Griechische Sagenbilder* p. 25, no. 103) dates it 'late Geometric,' *i.e.* before 700 B.C.

[5] *Annuario* x–xii p. 473. The Arkádes example cannot be dated exactly, but it is probably not earlier than this brooch. See p. 117 below.

[6] Payne *B.S.A.* xxix Pl. xiv pp. 245, 283.

[7] See p. 123 below.

[8] Kourouniotis 'Εφήμ. 1903 p. 30 Fig. 17.

elaborate, and a plated tripod may be intended. Birds are still in the late Geometric manner.[1]

*The seventh century.*[2]

1. Early proto-Corinthian aryballos in Ithaca[3] (my Fig. 14). Boxers beside a tripod. They resemble the men on the Berlin aryballos (no. 2 below), but the drawing is less careful and there is no incision. The tripod is summarily shewn, but it has ornamental feet, probably lions' feet. Early seventh century or possibly the end of the eighth. A dedication.

2. Early proto-Corinthian aryballos in Berlin.[4] No lions' feet. The legs bend and taper, and the cauldron has a shoulder, so that I do not agree with Dr. Karo[5] that this is a tripod of Furtwängler's class III (my classes 2 and 3), for none of the legs of these tripods taper or bend, none would fit such a bowl.

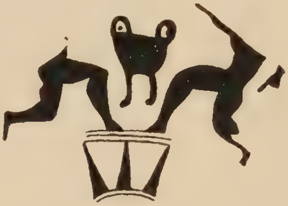

Fig. 14.—On an Aryballos from Aetos, Ithaca.
Scale: c. 6 : 7.

3. Proto-Corinthian ovoid aryballos in Syracuse.[6] Chariot race: tripod and other prizes beside the judge. The tripod probably has lion's feet.[7] Second quarter of the seventh century.

3*a*. Similar aryballos in Taranto.[8] Plastic female heads on the neck. The tripod certainly has lions' feet.

[1] Prof. Beazley has called my attention to a geometric krater in the Cabinet de Médailles with tripods, and Mr. R. M. Cook to a krater from Eleusis in Heidelberg with a very tall tripod between horses. See also below, pp. 128 ff., Appendix 2, clay tripods in Laconia.

[2] No. 1 is archaic in feeling even if it belongs to the eighth century, so I classify it here.

[3] Found at Aetos. Information and tracing kindly supplied by Mr. Martin Robertson. For boxing scenes see the references given on p. 105.

[4] Dated by Payne to the early seventh century, *Protokorinthische Vasenmalerei* p. 21 Pl. 9, 3.

[5] *Ath. Mitt.* 1920 p. 142. None of the extant strips of hammered tripods of the Olympia type taper to this extent. The tapering is confined to the top near the bowl. Some of the later strips in Athens do taper, but their reconstruction is uncertain. See pp. 120 ff., below.

[6] *Mon. Ant.* xxv p. 551 Pl. xiv; Johansen, *Les Vases Sicyoniens*, p. 98, no. 54, Pl. xxxiv, 1.

[7] Prof. Carta, who has most kindly examined this vase for me, agrees with this statement.

[8] 7143. Johansen, p. 99, no. 56, Pl. xxxv, 2. Horse race.

4. Terracotta plaque in Bari, from Taranto,[1] representing a tripod-cauldron beside a cauldron with two griffins and probably two sirens, set on a plant-like stand. The griffins are long-eared and snaky, and stand upright on the shoulder of a bowl. The legs of the tripod are normal, but the cauldron has an everted rim, and the handles are discs with a small hole in the centre. The plaque is dated to the seventh century by the long ears of the griffins and by the form of stand. This is our nearest approach to a tripod-lebes in Italy.

5. Stamp in the Ashmolean Museum [2] from Corfu. Middle of the seventh century. An athletic scene, boxers beside a tripod, legs of the tripod bend and taper, lions' feet, three handles. Dots for handles and struts.

6. Bronze mitra, from Axos,[3] in Candia. The tripod has three handles and lions' feet. Late Protocorinthian style. Dragons' heads inside the legs.[4]

7. Terracotta plaque in the Louvre, from Siphnos.[5] Galloping horsemen between tripods, frieze of chariots below. Handle of the left-hand tripod carelessly drawn. Leg-struts and lions' feet. Third quarter of the seventh century.

8. Early Corinthian alabastron.[6] Cauldron has a dinos-like shape, but the legs are attached to the cauldron and have lions' feet. Last quarter of the seventh century.

9. Corinthian aryballos from Kamiros, in the Louvre.[7] Two men running up to a tripod set on leaping flames. The leg-plates are elaborate, no leg-struts visible, lions' feet. About 600 B.C.

### *Evidence of Representations for Constructional Changes.*

The unfortunate lack of interest in tripods shewn by the artists of the seventh century does not allow very much dating evidence; moreover, it is not possible to deduce from monuments the exact shape of cauldrons or the exact attachment of legs. Still, the monuments shew certain constructional features not present in the tripods of class 2, and probably not in class 3:

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[1] These observations are based on a photograph kindly sent me by Miss Wynn Thomas, who called my attention to this plaque (Petersen *R.M.* xii p. 112. The griffins are not well represented in the drawing, and the things on the rim are not rings, but knobs).

[2] Payne *Necrocorinthia* Pl. 45, 3. Late Protocorinthian. For references to boxing-scenes see p. 105 above.

[3] Unpublished; mentioned Poulsen *Ath. Mitt.* 1906 pp. 383 ff.

[4] Cf. the figurines on tripod-legs catalogued on pp. 95 f. above; also the beautiful dragons' heads on the helmet from Axos (*B.C.H.* 1936, p. 272, Fig. 37).

[5] Louvre, no. 205. The reference and the description are taken from Payne's notes.

[6] Payne, *Necrocorinthia* no. 457 Pl. 20, 2.

[7] *Id.* no. 552; Pottier, A 472, Pl. 16. (*C.V.A.* Louvre III c *a*, Pl. 19, nos. 28, 29, 31, 32.) The men are neither praying nor mending the fire. Mr. Payne pointed out this vase to me.

1. Legs bend; 2. legs taper; 3. under-decks; 4. upper-decks; 5. three handles; 6. lion's feet; 7. dinos instead of lebes.

1. Legs bend.

This occurs on the oinochoe in London,[1] and on no. 7, but it may be accidental.[2] It is certainly intentional on the late Geometric brooch from Boeotia,[3] which has a bud in the corner and others in the field. The tripod on the Ashmolean [4] stamp is of the same type. No object has been found which exactly illustrates this drawing, but something like *Ithaca* no. 13 or 14 may be intended.

2. Legs taper.

The brooch from Boeotia.[5]

3. Under-decks.

The brooch from Boeotia.[5] It is possible that the hole drilled into the back of the fragment of leg *Ithaca* no. 5 (Fig. 10*c* on p. 60) indicates a reconstruction of this nature.

4. Upper-decks.

The Eretrian krater.[6] No further example of this construction till the fifth century.[7]

5. Three handles.

Geometric sherd from the Acropolis.[8] The next example is the tripod on the stamp from Corfu.[9] The number of handles on tripods of our class 3 is unknown; class 2 had two handles. The hammered tripod in the Ashmolean Museum [10] had two handles.

6. Lions' feet.

The early proto-Corinthian aryballos in Ithaca [11] gives the first example of a tripod-lebes ending in lions' feet. Payne dated it to the end of the eighth or the beginning of the seventh century. After the middle of the seventh century, lions' feet are the normal ending for tripod-legs.

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[1] Above, p. 103.

[2] *I.e.* not denoting any structural difference.

[3] Above, p. 107.

[4] Above, p. 109.

[5] See note 3.

[6] Above, p. 107.

[7] Below, p. 112, note 3.

[8] Above, p. 105.

[9] Above, p. 109.

[10] Below, p. 123.

[11] Above, p. 108, Fig. 14.

Here note certain marks on tripod-feet: some legs (*e.g. Ithaca* no. 4)[1] had a large bar fitted in front. The hole for this is not part of the original casting (as in *Ithaca* no. 3, Candia Museum no. 848, from Palaíkastro) nor does it pierce the leg; but is a rather irregular boring, sometimes helped out with a wad of bronze. Payne suggested that this may represent an attempt to bring the old legs up to date by attaching lions' feet. There are marks of repairs on six tripods in Candia, so that tripods were evidently much prized in Crete. A lion's foot can be set with confidence on the end of a leg in Candia (no. 1721) from the Idaean cave; for ·03 m. from the end, the original surface has been cut off in front and then roughened; holes were drilled in front and sides, and two more higher up on the side[2] (Pl. 22, no. 3, Fig. 8, 3). Still later this leg has again been strengthened with a piece of metal inside. The attachment of a lion's foot seems the best explanation of the holes in a terracotta tripod-leg from Samos.[3]

As far as the evidence goes, no extant tripod-lebes was originally made to end in a lion's foot. The only systematic renovation to accommodate a lion's foot was made on a leg with a rectangular section[4] which is late in the series. A lion's foot at Olympia (no. 859), similarly pierced, has also a rectangular section.

Note that Geometric and pre-Geometric tripod-stands end in animal feet. The feet of the early tripod-cauldron came in contact with the fire, and were therefore plain. After the tripods ceased to be set on the fire their feet also become ornamental. This useful austerity is a mark of the purely Hellenic character of the tripod-lebes. It is obvious that there would be exceptions to this rule that post-Geometric tripods are represented with animal feet. Cast tripods are durable, and those of peculiar sanctity would survive for centuries (as may have happened at Ithaca). Herakles frequently carries off a tripod with plain feet.

> (*a*) In the pediment of the treasury of the Siphnians at Delphi (dated *c.* 525 B.C.).[5] The hole on the far side of the tripod is intended for a handle; the other handle, which is broken, was partly masked by Herakles' left hand, the nails of two fingers being visible in the original. (Professor Beazley pointed out to me that the hand on his left shoulder is Athena's, which has not been noticed in the restoration or in the publication.)

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[1] *Ithaca* III Fig. 10*a*. One in Olympia (perhaps no. 558); one from Palaíkastro, Candia Museum no. 1336.

[2] Cf. the holes on the lion's foot *Olympia* no. 859; also Richter, *Met. Mus. Bronzes* no. 1190.

[3] Below, p. 113.

[4] Candia Museum, no. 1721.

[5] *Delphes* iv pt. 2, p. 157, Pls. xvi, xvii. The bowl was small and deep, but the shape is quite sufficiently indicated, and Mm. Picard and de la Coste-Messelière appear to have overlooked some of the details not clear (*e.g.* the fingers on Herakles' left shoulder, Pls. xvi, xvii) or obliterated (*id.* Fig. 57) on photographs.

(*b*) On a sixth-century relief in hammered bronze, from the Acropolis, at Athens.[1] Examples of tripods without lions' feet occur sporadically throughout the sixth and fifth century (*e.g.* a fragment of a pithos found at Prinias; late seventh to sixth century,[2] tripods and a chariot-race).

7. Dinos instead of lebes.

Although the old shape of basin is still often found, there is a new shape [3] with a narrow everted rim and a broad shoulder. The earliest datable example known is on the Berlin aryballos [4] mentioned above. This shape is to be connected with hammered tripods (cf. a clay imitation of these at Samos, dated earlier than 700 B.C. by stratification).

The bowls of the earliest cauldrons are deep, and curve inwards at the shoulder [5] (Class 1*a*). Then the rim straightens and the bowl is slightly shallower (Class 1 (*b–d*), Class 2). Lastly it changes to fit a leg that is nearly straight (end of Class 3), but how is not known.

*Conclusion.*

To summarize results, evidence from representations of cast tripods begins about the tenth century B.C. From vases which may be as early as 750, it appears that new types of tripods were being made, that radical alterations were taking place in the structure of cast tripods, and that these are not known in extant cast tripod-cauldrons. Therefore most of these tripods were made before 750 B.C. and 700 B.C. can be taken on the terminus ante. The terminus post is 1400 B.C. and although Class 1*a* fills up the gap in typology between the Minoan and the Greek tripods, there is a long interval of time during which there are no dated examples. The series of decorative tripods begins with *Ithaca* III, nos. 1 and 2,[6] and as the nicked fillets on the legs of these tripods connect them with the series that follows, they should be placed after 1000 B.C.,[7] but there is little information how long after, or at what period the next step was taken. Although the decoration of the tripod-lebes may be derived directly from Mycenaean times, the process would, no doubt, be accelerated if the mainland came into contact with foreign models such as Cypriot[1] tripod-stands. The tripod found on the Pnyx looks like an import, and such imports would have provided the stimulus required to hasten the production of decorative tripod-cauldrons. It is scarcely to be hoped that a tripod-lebes will ever be stratified in its chronological position, but the position of figurines may one day stand on a surer foundation, and will then approximately fix the position of tripods.

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[1] Bather, *JHS.* xiii Fig. 30 p. 264.

[2] *Annuario* I p. 70 Fig. 39.

[3] Cf. Furtwängler's cauldron *Olympia* no. 582a. Examples are given by Schwendemann (*op. cit.*, p. 127), the best of which is *FR.* Pl. 133. Add *Necrocorinthia*, Pl. 20, 2. See also Appendix I (p. 127 below) on tripods on the fire. For a full-fledged classical tripod see the tripod carried off by Herakles on the plastic vase in Sarajevo (*W.M.B.H.* xii p. 286 no. 102) mentioned by Beazley (*JHS.* xlix p. 56, and dated about 470 B.C.). Four handles, under and upper-decks, lions' feet. See also *B.M. Coins of Aeolis* Pl. xxxviii 24 (Mytilene).

[4] Unless the plastic lid from Knossos (no. 22, p. 107 above) is included.

[5] This is the shape of a lebes found in the Kerameikos with pottery of the 'severe frieze' style. It had legs but no handles, and a leaden lid was nailed over it. This information was kindly given by Dr. Kübler. See *Arch. Anz.* 1934 p. 243.

[6] See Pl. 10 and p. 80 above.

[7] This dating is confirmed by the Protogeometric tripod in the Kerameikos, above, pp. 77, 101 f.

The terminus ante at 700 B.C. is supported by the stratification of the remains of two clay tripods.

1. Leg and part of the bowl found at Perachora in the dump from the Geometric temple,[2] dated before 725 B.C.

2. Leg in Samos, imitating a hammered tripod,[3] stratified before 700 B.C. See also the evidence from Laconia and Taranto, below pp. 116, 129.

The following chronology is suggested:

*Cast Tripod-Cauldrons Class* 1. 1000–800 B.C.

Low tripods like *Ithaca* no. 1, and larger tripods of the same type. Legs with plain sections, handles with round sections. At the end of the period flat handles are found. *Ithaca* nos. 1–6 (see Fig. 19 on p. 70). This class corresponds to Furtwängler's class I.

*Cast Tripod-Cauldrons*, *Class* 2. 800–750 B.C.

Legs with spreading and complex sections, handles with flat sections. *Ithaca* nos. 7–9 (Figs. 16, 17, 19 on pp. 66, 67, 70).

*Cast Tripod-Cauldrons*, *Class* 3. 775–725 B.C.

Legs with hollow rectangular or double T sections, light flat handles. *Ithaca* nos. 10, 11 (Pls. 10 and 17, Fig. 19 on p. 70).

Classes 2 and 3 correspond to Furtwängler's class III.

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[1] Already adumbrated by Miss Lamb, p. 46. My frequent references to this book shew how much I am indebted to it. Reference is made above to possible influence of these tripod-stands on spiral decoration (p. 80); herring-bone ornament on early tripod-handles (p. 80); zigzags (p. 95); bulls' heads (p. 125). See also pp. 124 ff., below. New evidence of connection between Cypriot and Cretan metal-work is afforded by a wrought tripod-stand found in a Protogeometric grave at Knossos by Blakeway. The technique and form are Cypriot: the pattern is that of the cast tripod leg *Ithaca* no. 9 Pl. 17*e*.

[2] Information kindly given by Mr. Payne. He thought that the character of the glaze on the vase placed it late in the deposit.

[3] *Arch. Anz.* 1933, p. 254, Ab. 12. Information kindly given by Dr. Karo.

*Hammered Tripods.* 750–700 B.C.

Strips of thin bronze with chased patterns. *Ithaca* no. 14. These correspond to Furtwängler's class II. They may not be tripod-cauldrons.

*Historical Implications.*

Although the dates attributed to Attic Geometric vases are experimental, there may be a connection between these paintings and historical events. Before the second quarter of the eighth century, there are representations of massed tripods, and these probably represent funeral games [1] in honour of the dead. In the second quarter of this century, single tripods appearing on vases probably to commemorate individual victories,[2] their chief function on vases, until they become common in athletic and mythical [3] scenes in the sixth century. It follows that the first victories thus commemorated were won not later than 775 B.C., that the prizes, at least at first, were tripods,[4] and that the most important race was a chariot-race. This is surely an indication of organized games in Attica, about the traditional date for the reorganization of Olympia. Now some ancient authors [5] are said to attribute the foundation of the Panathenaia to Erechtheus, who was particularly interested in chariots. The festival was at any rate of venerable antiquity, and these vases may commemorate Panathenaic victories. What was the function of the actual bronze tripods which have been found? Tripods began as cooking-pots, and they probably achieved their magnificence to grace feasts. These feasts were accompanied by games, and tripods being convenient prizes became a symbol of athletic victory. Practically, however, a tripod-lebes was an awkward object to carry away, and a simple and honourable way of disposing of it was to dedicate it at the local shrine. Most of the tripods [6] at Olympia, Delphi, Argos, Delos and perhaps at Ithaca,[7] should thus be regarded.

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[1] See p. 103 above, Geometric monuments nos. 1, 5, 9, 10. Hesiod (Ἔργα 654) would seem to refer to such a funeral, but παῖδες can mean the citizens of Chalkis, if, as seems probable, Amphidamas is some local mythical hero, perhaps that Amphidamas whose son was killed at Opous (*Il.* xxiii 87). The ἆθλα then are the local festival (in no wise connected with the Lelantine War; Burn *JHS.* 1929 p. 33). 'ὠτώεντα' certainly indicates a tripod-lebes (see p. 74 above).

[2] See no. 3, p. 103 above. Geometric monuments 2, 4, 6–8, 10, 11, 14–18, 20, 21, 23.

[3] The earliest mythical scene mentioned here is the lid from Knossos no. 19, see p. 107 above. The identification of myths requires care. Prof. Schweitzer (*Herakles*, p. 93, abb. 25) identifies Poseidon by double-axes. Is he sure they are not butterflies? Alternatively which is Poseidon in the prothesis scene on the sherds, Pottier, Pl. 20, A. 519, A. 541.

[4] The fact that none have survived does not prove that none existed in Attica.

[5] Hellanikos and Androtion. Harp., ed. Dindorf p. 234, 15; for Eratosthenes see Mommsen, *Feste der Stadt Athen* p. 91.

[6] The history of Cretan tripods is probably different.

[7] See *Ithaca* III pp. 53 ff.

The dating attributed to the tripod-cauldrons on the evidence of the vases must be checked by any other evidence available. The traditional date for the refounding of the Olympian games (776 B.C.) falls within the period suggested for the beginning of very ornamental tripods (class 2 with fancy leg sections). No doubt this event accelerated the development of victory tripods. Nevertheless it was not a founding but a refounding of a festival that went back to heroes who lived before the Trojan war, so it is reasonable to date many decorative bronzes before 800 B.C., the chief innovation involved in the chronology here suggested. The silence of Homer about a great national festival at Olympia argues that the poems were written before 776 B.C. Yet Homer knew of games held in Elis[1] for tripod-prizes, and race-horses sent for the contest and stolen by Augeias, a proceeding which would be possible when meetings were occasional and haphazard. Homer speaks of large tripods,[2] which supports the conjecture that the use of large tripods preceded 776 B.C. Phlegon[3] says that crowns were first given in 748 B.C., implying that prizes were given from 776–48 B.C. The manufacture of extremely ornamental tripods no doubt served to popularize the festival. Tripods of this kind may have continued to be given elsewhere for a time, but something killed the industry. It may be that a lack of metal was the underlying cause for the substitution of crowns. Dedications continued, for a time hammered tripods which looked rather nice, but could not cook and did not last.

Except for the queer and unsuccessful animals on the tripod-legs (nos. 3 and 5, p. 95 above), the decorative elements on Class I tripods are all present in pre-Geometric times; rope-markings on the handle of the Stais tripod,[4] bulls' heads and birds on the Tiryns[5] tripod-stand. All except the bull's head on *Ithaca* III no. 3 are artistically inferior to the early handle-attachments, even the calves' heads on the Cretan tripod-legs, whose section is late.[6] The presence of a group on the leg from Olympia[7] (p. 96, no. 5 above) is a reason against dating this leg too early. The decoration does not help, for it is found both early and late. In support of the dating suggested, note the sharp planes and meagre proportions of the animals, by which they are easily distinguished from the pig-faced lion[8] at Olympia, which may date about 750 B.C.

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[1] *Il.* xi 699 ff.

[2] A hog could not be seethed in a small lebes, *Il.* xxi 362, 363; probably *Il.* xxiii 264 δυωκαιεικοσίμετρον denotes a large size.

[3] *F.H.G.* III 602 ff. 604 top.

[4] Above, p. 76 Fig. 1.

[5] P. 95. The birds dangle between the legs.

[6] P. 96 above, nos. 6–8.

[7] My Pl. 22, no. 2.

[8] *Olympia* no. 641 (my Pl. 24, no. 4).

## THE CHRONOLOGY RE-EXAMINED IN THE LIGHT OF STRATIGRAPHIC EVIDENCE

In the absence of stratified tripods, stratigraphic evidence for the date of figurines becomes valuable, but unfortunately such evidence for Geometric objects, other than vases, is extremely scanty. A man sitting with his hands on his knees was found in the sanctuary of Artemis Orthia with geometric pottery.[1] He is to be compared with a statuette at Cambridge [2] whose upturned, bearded face has something in common with the class of the statuette in Ithaca (no. 15).

The horses found at Artemis Orthia are a disappointment. It is impossible to refer to any one horse found in a Geometric context, for they are all classed together in the publication, and dated from the eighth century to 640 B.C.[3] Of their style the publication tells little, but the shape of the base on Pl. lxxvii is that of the base of a horse[4] in London, underneath which is a Geometric relief of two warriors conjoined in body.[5] In style these horses are nearest to those of the hammered tripods.[6]

Furtwängler has classed 106 bronze animals[7] at Olympia as pre-Geometric on stylistic grounds. At the Dictaean cave, bronze statuettes of men and animals of M.M. II type are common. Elsewhere they are rare even at that period, and grow increasingly rarer in the succeeding periods. There is finally a complete break until the Geometric age brought new bronze herds and at present no ‘ prospectors ’ have been found with Protogeometric[8] pottery.

[1] Pp. 196, 197, best illustrated, Lamb, *B.S.A.* xxviii Pl. xi no. 12. No doubt Lycurgus thinking about his laws.

[2] Unpublished; Miss Lamb kindly called my attention to this statuette. Other bronze, Geometric statuettes with this attitude are: Buschor, *Plastik der Griechen*, p. 8; Louvre (De Ridder, Pl. 10 no. 84); Athens, from Velestino, probably the top of a pin; a seal in Tegea (*B.C.H.* 1921, p. 355 no. 52), a maze beneath. A statuette on a seal from Messina in Oxford (F. Matz *Frühkretische Siegel* p. 62, ab. 22) has this attitude; arms and head are missing, and the stumps are worked over; the style is different. Matz is wrong in stating (*op. cit.* p. 62) that bronze seals with standing animals as handles are only found in Hittite circles. See *Argive Heraeum* ii Pl. lxxii–lxxiv; ch. lxiii, 13 with Tegea, *op. cit.* p. 353 no. 46.

[3] ‘ In the lowest layers . . . few specimens . . ., the bulk of them in those layers which were marked by proto-Corinthian pottery ’ (*op. cit.* p. 197).

[4] 1905.10.24.5 from Phigalia. Beazley and Ashmole *Greek Sculpture and Painting* Fig. 4.

[5] Aktorione-Molione? R. Hampe *Frühe Griechische Sagenbilder* Pl. 34, pp. 48 and 87.

[6] Since writing this I have been able to examine the horses from Orthia. They are hammered out of sheet bronze, like *Delphes* no. 134 (see above, p. 98, note 3). Stratigraphic evidence from a grave in Taranto : a bronze horse of this type was found with a late ‘ aryballe pansu,’ to be dated about 700 B.C.

[7] *Olympia* pp. 28–34 nos. 90–196. Many are undateable primitives; nos. 128–30, 150–79 are recognizable Geometric types; 180–96 are archaic.

[8] The figurine found at Vrókastro (E. H. Hall, p. 121) is too uncertain in style and in context to be so regarded at present.

The uncompromisingly Geometric style of tripod cauldrons in Crete makes it difficult to believe that the Cretan school of metal-workers which produced the hammered bronze shields can be contemporary.[1] The systems may just overlap, for there is one point of contact, the ‘ omphalos ’ shield (Kunze, no. 27, Pl. 34), which I believe should stand at the beginning of the shield series and not at the end where Dr. Kunze placed it. The six-leaved rosette in the centre surrounded by a zigzag is very close to the panelled tripod-leg *Delphes* no. 243 dated by me 750–25 B.C. It is imitated by a clay tripod-leg found at Perachóra and dated by Payne on stratigraphical and technical grounds to the third quarter of the eighth century. Among the processional animals on the omphalos shield is a horse which has much in common with the long-legged, slim group on cast tripod-handles (probably to be associated with panelled legs) ;[2] compare the shape of the head, the treatment of the mane, and the long body.[3] I shall discuss the date of other shields elsewhere in connection with bronzes from Palaíkastro.

Dr. Hampe[4] offers a new scheme of dating for bronze statuettes. His group *a* (Pl. 30) does not seem to me to be homogeneous : while the groups at the top of the plate shew the same tension as the horses and men connected with hammered tripods,[5] the lower group, 3*b*, may be a good deal earlier.

The discoveries at Capodimonte[6] offer one of the closest datings for Italian bronze-work. Tomb II contains a brazier on wheels whose resemblance to *Ithaca* no. 3 is discussed below.[7] It appears to have contained a single undisturbed burial. The published geometrizing vases from some of these tombs appear to have been derived from models dating before 750 B.C., but the krater[8] in this tomb cannot be dated before 725 B.C., and Blakeway told me that it might be as late as 675 B.C.

Negative evidence has a certain dating value. The absence of tripod-cauldrons from Greek colonies suggests that their vogue had already come to an end. The finds in Ithaca shew that they could travel by sea, for it is hard to believe that those found there were made in the island. In Arkades, which is mostly to be dated to the seventh century or the end of the eighth, a tripod-stand stood in a grave,[9] while the tripod-lebes[10] is represented by two inconsiderable fragments near the mortuary chapel.

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[1] Dr. Kunze (*Kretische Bronzereliefs* p. 247) dated the shields from before the beginning to after the end of the eighth century, but he seems to date them later now ; see his review of Hampe *op. cit.*, *Gottingische Gelehrte Anzeigen* 1937, p. 291.

[2] Above, p. 89.

[3] See p. 84 above.

[4] *Op. cit.* p. 38.

[5] Above, pp. 84 ff.

[6] Paribeni *Notizie dei Scavi* 1928, pp. 436 ff., Pl. viii. Dr. Kunze kindly called my attention to this important publication.

[7] P. 120 below.

[8] The krater has not yet been published, but Prof. Paribeni most kindly sent me a photograph.

[9] Levi *Annuario* x–xii Fig. 57. This reconstruction is rather too imaginative.

[10] *Op. cit.* Pl. viii F. 1, F. 2. See below, p. 118.

The legs of the miniature tripod found by Miss Burr in the Agora [1] are too long in the reconstruction. One leg, ·08 m. long, seems complete though broken. Miniature tripods of so fragile a kind cannot be taken as evidence for the exact attachment of the legs, but as there are no handles, it is not an orthodox tripod-cauldron. At Trebenischte, securely dated to the middle of the sixth century, there are tripod-stands with the fine figurines of the period.[2]

## FACTORIES

The cast tripod-cauldron was evolved in Greek lands, and as far as the evidence goes, it was never exported. Whether its patterns and its figurines are native or not,[3] the thing itself must have been evolved where the national habits and festivals were paramount; that is to say, not in Rhodes,[4] Samos, or Cyprus, but somewhere in close touch with Delphi and Olympia. Fragments of many tripods were found at Delphi and Olympia. The following is a list [5] of cast tripods found elsewhere. I have counted either legs or handles with different sections.

| | | | |
|---|---|---|---|
| Idaean Cave | 23 | Arkádes [7] | 2 |
| Ithaca | 11 | Praísos | 1 |
| Palaíkastro | 10 | Sparta [8] | 1 |
| Delos [6] | 7 | Anávlochos [9] | 1 |
| Argive Heraeum | 4 | Rhodes [10] | 1 |

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[1] *Hesperia* 1933 p. 621. Professor Beazley kindly drew my attention to this tripod. The Sunium tripods are not an exact parallel, for they have retained their handles.

[2] *Arch. Anz.* 1933 p. 467.

[3] I think they are, but see Schweitzer, *Ath. Mitt.* 1918 p. 85.

[4] In spite of successes in the fifth century, there is little evidence of Rhodian interest in athletics in the eighth.

[5] See the list of references given by Schwendemann *J.d.I.* 1921 p. 155. Amyklai, Phigalia, the sanctuary of Zeus Lykaios and Athens appear to have yielded only hammered tripods. De Ridder, *Cat. des Bronzes de la Societé Archéologique d'Athenes* No. 2, describes a cast tripod-leg from Amyklai, which may be a leg actually in the National Museum, but he refers to Bather's illustration of a chased fragment, *J.H.S.* 1893, Fig. 2, 3. No. 3 he says was cast and found by Tsoúndas at Amyklai, but the reference given is 'Εφημ, 1892, p. 17 where Tsoúndas describes a chased tripod-leg. I have not seen the material from the Ptoon, but Payne told me there were no tripod-cauldrons among it. One iron leg from Dodona was published as a handle (Carapanos *Dodone* I p. 108, 2). There are three legs in Athens from Dodona, but their type is quite uncertain.

[6] I have examined the material in Delos by kind permission of the Director of the French School.

[7] Both are handles. Levi *Annuario* x–xii Pl. viii, F1, F2.

[8] Information from Mr. R. M. Cook. An open-work handle surmounted by a horse in the museum, from the Acropolis; see below, p. 129, Fig. 17*d*.

[9] *B.C.H.* 1931, p. 378. Dr. Marinátos kindly called my attention to this tripod.

[10] Blinkenberg *Lindos* nos. 742, 743, Pl. 31.

Leg-sections of Class I occur at Olympia, Delphi, Ithaca, Palaíkastro and Delos. The intermediate sections at Olympia, Delphi, Ithaca, Palaíkastro, Delos and the Idaean Cave.

From the classification table it appears that legs of class 1, with the appropriate handles, are rare except at Olympia, and it seems likely that they were first manufactured in the Peloponnese, primarily for Olympia, with occasional exportation elsewhere. There are many examples of legs with complex sections (class 2) in Crete, most of which have a protuberance in the middle of the sides and are decorated with plain fillets (see my Fig. 8, 4). This section occurs hardly if at all on the mainland, and it must be of local manufacture. Spirals are rare and zigzags never occur on Cretan legs.

Coming to the distribution of the class 3 sections, differences between Crete and the mainland are even more marked. The double T section hardly occurs in Crete; chevrons and zigzags, so popular on the mainland, never occur on Cretan tripod legs; and the peculiar Cretan section, a hollow rectangle with turned-out ends, is not recorded from the mainland (see my Fig. 7, 7). Handles with open-work wedges [1] occurs on all Cretan sites but Palaíkastro, and sparingly in Delphi and Olympia. As one such handle [2] in Candia has a very early bird and another [1] a late horse, evidently the type lasted a long time in Crete and was very likely invented there. It is probable that the Cretan cast tripod with rectangular [3] section was still being made, while the mainland was experimenting with chased patterns on composition tripods.[4]

Wheeled traffic as a whole originated in the East (see p. 89, n. 1 above), but wheels are liable to be affixed to vehicles with many specific uses. Among the first of these would be the water-carrier as at Ur. Those which have been preserved in graves or sanctuaries, may sometimes have had a special religious meaning, but they must represent a multitude of perishable objects whose use was entirely practical. All wheels need not indicate a community of religious beliefs. M. Charbonneaux [5] has illustrated a good many four-wheeled cauldrons where birds or swift animals are thought of as drawing [6] vehicles, which appropriately move backwards or forwards.

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[1] See the Ashmolean handle (my Pl. 20, no. 1, p. 84 above).

[2] Idaean Cave, Candia, no. 112, my Fig. 5*c*. The section is like that of the Ashmolean handle on Fig. 5*b*.

[3] Note the imitation of this type with sheet-metal p. 71 above; see also p. 124 below.

[4] Found at Olympia; Delphi (besides the examples in *F. de D.* V, Prof. Beazley called my attention to a tripod-leg in vol. ii pt. 3, p. 104, Fig. 116); Athens; Ithaca; Dodona (Carapanos Pl. xlix and *Louvre, Bronzes* ii Pl. 92); Haliartos (*B.S.A.* 1932 Pl. 37, 5); Amyklai (*Ath. Mitt.* 1927 p. 36 Beil. vii); never in Crete. In Delos there are fragments of perhaps three such tripods, including a very fine handle.

[5] *Préhistoire* 1 Figs. 13, 17.

[6] Miss Roes prefers a less simple explanation. It is to be regretted that she has

In Greece good surfaces and easy gradients are few, and so are wheeled cauldrons. In six-wheeled tripods the wheels are affixed in pairs directly to the legs, making each into a separate wheeled chariot. A larger pair of wheels with pole attached was found in Cyprus,[1] but there is no evidence for the reconstruction. The Lucera tripod-wheels [2] are even more chariot-like than the Greek ones, for besides a pole, they have a step behind. Their present arrangement as a hexicycle drawn in three different directions by goat-protomes is hardly logical, but logic does not always characterize Italian craftsmen when dealing with a foreign model. Wild-goat protomes in this position recall Cypriot tripod-stands.[3] Double wheels attached to a bird with a pierced body, from Pherai [4] (Velestino) are in the National Museum at Athens, and there is another in London. The double-wheel tripod is therefore probably a Greek invention. The foot of the leg *Ithaca* III, no. 3 contains a shaft, and the bronze wheel fits equally well at either side. The feet of the Lárnaka stand [5] are made in a similar way, but here the shaft goes right through two legs. *Ithaca* III no. 3 cannot be a tetrapod, as leg and handle were found attached close together. The form of the Cypriot vehicle, is, however, reproduced in the brazier from Capodimonte. The chief structural difference consists in additional shafts between fore- and hind-legs, and the result is the usual Italian four-wheeled cart. The figures on this Italianized vehicle have little in common with tripod-figurines, but their habit of melting into supports [6] recalls the Idaean fragments,[7] and like them they represent genre scenes.

## HAMMERED-TRIPODS [8]

In cast-tripods the curve of the leg-plate gives the curve of the bowl, from which can be deduced an approximate diameter; Furtwängler's

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omitted the significance of birds and animals on tripods from her *Greek Geometric Art*. Prof. Jacobsthaal has called my attention to the views of Dr. Elferink in *Lekythos*, but in spite of all provocation I resist the temptation to discuss the juxtaposition of dolphins, tripods and eggs.

[1] Murray *Excavations in Cyprus* p. 15. I sometimes wonder if this is not just a chariot, cf. Neugebauer, no. 16.

[2] Charbonneaux *op. cit.* Fig. 16 no 4, in Oxford.

[3] P. 95, n. 1 above.

[4] P. 89, n. 1 above. The London bronze may also have come from Velestino, and perhaps they should be reconstructed as an eight-wheeled rectangular cart, the body of which consists of wheels instead of spirals (cf. the Pnyx tripod). One set of six wheels which seems unbroken is drawn by a horse's head and has tangs behind.

[5] See p. 124 below. The feet of supports at Delphi (*Delphes* nos. 255, 255 bis) are very like the feet of the Larnaka stand.

[6] *Not. d. Scavi* p. 442 Fig. 13.

[7] Above, p. 98.

[8] See above p. 91 foot.

estimate does not differ very much from mine, which in one tripod, *Ithaca* no. 9, is based on certainty.

In the reconstruction of hammered-tripods, he is in the realm of pure conjecture, with regard to the relations and proportions of the parts; for the front pieces of legs at Olympia do not give reliable indications. By kind permission of the Keeper of the Ashmolean Museum, I publish part of a large leg-plate (my Fig. 15, said to come from Olympia), which gives more information. It has chased patterns, like those of the Olympia tripods, but not identical with any of them. It is the top of a leg with cross patterns at the bend, and a cut at the right-hand top corner. The bottom has been cut irregularly and the cross patterns are just going to begin again (l. ·28 m., w., at the top ·295 m., at the foot ·17 m.). Besides the constructional rivet-holes at the top (two at each side and one in the middle), there is another rivet, ·07 from the right end, which fastens the end of a broken tab to the leg.

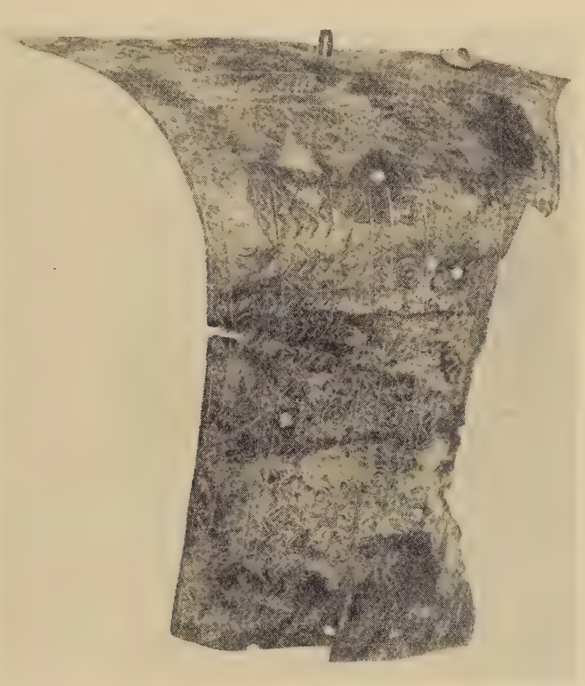

FIG. 15.—PLATED TRIPOD LEG IN OXFORD.
Scale: c. 1 : 4.

The line on my Fig. 16, shews the curve of the Ashmolean leg, which Mr. Leeds most kindly plotted for me. It may have been more curved in antiquity, as it is elastic, but it can hardly have been straighter. I have set a dotted line at the side to represent an average side piece; and at the top there is a space such as would be filled by a cut side-piece (*Olympia* no. 597 or the like). The top of the leg rested on the bowl, which was not shaped like an ordinary tripod-lebes (as in Furtwängler's reconstruction [1]), but like a dinos such as is required by the later griffins.[2] The only way to fit the Ashmolean leg to Furtwängler's cauldron would be to slope it violently inwards. This would mean a slope at the foot of the side pieces, of which there is no trace.[3] Schwendemann [4] says that these tripods are stronger than the cast ones: the mere fact that they are all so fragmentary to-day is a refutation of this theory. Furtwängler thought that

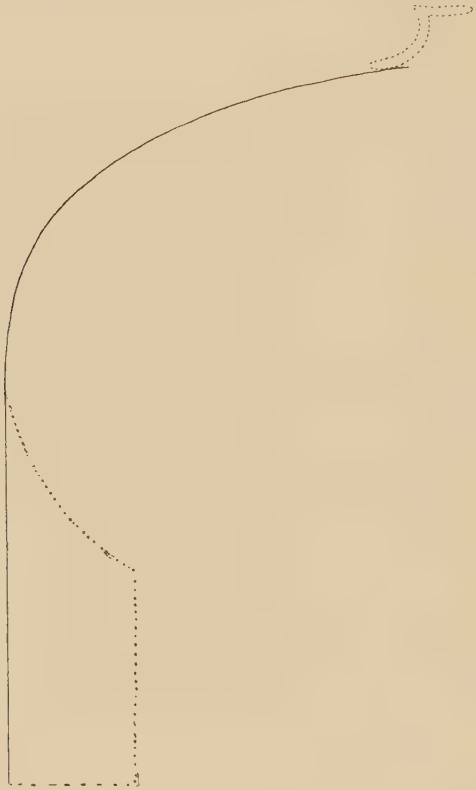

Fig. 16.—Curve of Leg-Plate in Oxford, Fig. 15.
Scale: c. 1 : 3.

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[1] *Olympia* Pl. xxxiv*c*.

[2] Below, p. 126.

[3] *Olympia* no. 590 seems to be an end, and so does a strip in Athens from Dodona. In any case a violently sloping leg, rectangular in section, would be difficult to manage.

[4] *J.d.I.* 1921. p. 125, top.

the side pieces had hinges, through which went nails, which were then hammered flat; and that the leg stood up without further backing. Now most of the side pieces have not got hinges, but tangs, nail-holes, and the like. Some side pieces have deliberately made joins for which the pattern allows (*e.g. Olympia*, nos. 600 and 606), just where the strain would come in an unbacked leg. These legs must have had a backing,[1] presumably of wood, on which slots for the tangs could be affixed, or to which hinges could be nailed. If hinges were used and the side pieces were put on first, the nails of the front piece might by accident pass through the side hinges (which may have happened in *Olympia* no. 589, p. 82).

In the Ashmolean tripod-leg, below the top, which was fixed to the cauldron, there is a system of alternately placed side nails, and an occasional middle nail.[2] In almost all the extant front pieces these side nails are present and demand a backing about ·10 m. wide. These nails would be almost invisible when hammered flat.

To return to the tab on the Ashmolean leg, it is not the same shape as the base of the Olympia statuette,[3] but it is not unlike the cushion bent beneath the feet of *Ithaca* no. 15.[4] It is the end of the attachment of a handle side-figure which has impinged on to the leg. It serves to confirm Furtwängler's attribution of the Olympia statuettes, and my attribution of *Ithaca* III, no. 15 to a tripod. If the handle was so close to the leg, it shews that an effort was being made to reduce the enormous size of basin needed. Not much less than ·90 m. of the circumference would be taken up by the legs. The diameter of the biggest handle at Olympia is ·30 m. Subtract the part that impinged over the legs and we are left with about 1 m. of basin circumference occupied by legs and handles alone. There were only two handles.

Furtwängler's sketch[5] of the statuette-base in position has inverted the curve of the rim of his own reconstruction. The rims of his cauldrons on Pl. xxxiv are all convex on the outside, and he wishes to fit this convex rim exactly to a concave base. If this is difficult on Furtwängler's bowl, it is impossible on mine (Fig. 16); the dotted outline of the base of *Olympia*, no. 616, taken from a cast, is absolutely in the air. *Olympia* Pl. xxxi, no. 583 shews that the leg was not on the rim, and a high everted rim must be reconstructed for these statuettes. Such a rim would also facilitate the attachment of the handles. Furtwängler's handles, anchored on the rim, do not look secure, and some of the rivet-holes seem to have no purpose.[1] Finally one handle has had part of its circumference bent over almost to a right angle. The circumference thus bent is continued in a kind of flap and then fastened with three rivets. From this handle alone a dinos shape is inevitable.[2]

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[1] ἐπίχαλκος, Paus. v. 12. 5, would describe this kind of tripod.

[2] See no. 590. According to Furtwängler, the middle nails are due to later re-using, a practice which is well established (see the inscribed strips, *Olympia* nos. 586, 591. *Olympia V*, *Inschriften*, no. 3, 4, 5, 8, 15. Of these no. 4, *Olympia IV*, no. 586, seems to be the earliest, as the letter forms are more primitive than those of the boustrophedon inscriptions *op. cit.* v nos. 1 and 2. Seventh century?

[3] No. 616.

[4] Above p. 86.

[5] *Olympia* p. 88.

Crete also provides some evidence for the construction of hammered tripods. Two fragments of beaten sheet-bronze (my Fig. 10*b*) l. ·295 m., ·115 m., from the Idaean Cave, exactly imitate the legs of the latest cast-tripods with fillets. The two sides of one with complete edges are bent at right-angles. It has rows of little regularly placed tack-holes at the sides, and the surface is also peppered with them; one tack is still in position in one piece, and three in the other. This tripod at least must have had a backing of wood, and was rectangular in section. Such a tripod could have no contact with the fire, but it would stand up, and however flimsy the nails were, it would hold together for a time—but not for centuries, like cast-tripods.

## Note on Tripod-Stands

The cooking-pot tripod must not be confused with the tripod that was some kind of a stand. The former is sometimes called the Geometric tripod, a misnomer because, as Miss Lamb's[3] list shews, the tripod-stand, too, was in use in the Geometric period. The earliest example is the tripod from Kourion with the galloping animals (Lamb, no. 1), which can hardly be put after 1450. The stand from Enkomi[4] may be a little later, but not much. Perhaps the double spirals and the so-called spiral necklace[5] in Shaft-grave III at Mycenae should be reconstructed as a tripod after this manner with the six gold wheels.[6] The wheeled stand from Lárnaka[7] is much more severe and the angularity of the sphinxes betrays new influences. As, however, it has not yet assumed the Ionic volutes found in the later tripods, it is probably a transition type. The Tiryns tripod[8] is an import from Cyprus and a transition type between Mycenaean and Geometric styles. The bulls' heads are Mycenaean in style, but the birds are more like Geometric than Mycenaean birds. The Ionic volutes and the incipient animal-feet of this tripod-stand are like those of the Pnyx tripod, and there is a technical similarity between the heads at the junction of the legs and spandrils and the bulls' heads on the handles of tripod-cauldrons.[1] As bulls' heads continued to be affixed [2] to the outside of tripod-stands in Cyprus, direct influence is not impossible. The context of the tripod from Vrókastro (Tomb no. 2) is Protogeometric, that of the Knossos [3] one eleventh–seventh century (Lamb 4), of the Pnyx,[4] ninth century. Idaean fragments,[5] examples at Olympia and clay imitations, carry us through the eighth century and on into the seventh, when we have an example from Arkades.[6] By the sixth century, or at any rate by the fifth, the tripod-stand has superseded or coalesced with the tripod-cauldron. New evidence and closer study of the old leave clear the outlines of development from 1600–550 B.C.[7] It is less clear where this development took place, or how soon or how firmly bronze tripod-stands became established in Greece. There is no evidence for import from Cyprus after the Pnyx tripod. The Vrókastro stand departs a good deal from the Cypriot models, and may be under the influence of Greek cast-tripods. The tripod with bent legs [8] is a Cypriot development which did not reach Greece, but became the ancestor of a number of Italian tripods, though the Italians generally preferred rivets to solder. At any rate in the eighth and ninth centuries the bronze tripod-stand is an oriental type of foreign origin,[9] and so less popular [10] at the national sanctuaries than the native type. It seems to have been considered suitable to graves, the sort of thing a man would like to take with him, while no one would willingly travel with a tripod-lebes.

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[1] See no. 607 and Pl. xxxiii*a*. The two side holes at the foot are not through the overlap of the handle, and their only possible function is to join the handle to the rim

[2] Cf. the strap of the handle in Candia (my Fig. 6*b*).

[3] *Greek and Roman Bronzes* p. 33.

[4] *Id.* Pl. xii, 6.

[5] *Schachtgräber* Pl. xxi.

[6] *Id.* Pl. xx no. 38.

[7] Lamb, Pl. xii*a*.

[8] Above p. 95. See the tripods figured Petersen, *R.M.* xii p. 10.

The cauldrons set on these stands were not ornate in Mycenaean or Minoan times, though one-handled bronze basins with fine rims [11] may have stood there. Cauldrons like those at Tylissos or at Mycenae and Tiryns with upright handles or loops are commoner. Plain, upright handles no doubt continued throughout antiquity, but more ornate types are also found, perhaps under the influence of the tripod-lebes. Small, vertical ring-handles of the type of *Olympia*, no. 645, are suitable to wide, flat vessels. The decoration is like that of *Olympia* no. 570, and is to be dated fairly early in the Geometric period. There are many handles of this type at Olympia and a few at Delphi. The uncomfortable handle with the bulls' heads (*Olympia* no. 643, my Fig. 4) must have belonged to this type of cauldron, and is late in the eighth century. In the seventh century, figure-of-eight plates, surmounted by a stirrup and a bud, are attached to flat lavers.[1] A combination of bulls' heads and buds is found in the Bernardini tomb.[2]

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[1] Above p. 101. [2] *E.g.* the bull's head in New York, above, see p. 95.

[3] For a new tripod-stand found at Knossos, see p. 113 above.

[4] Above, see p. 80. Mr. Kahane has identified four of the vases said to have been found with this tripod: Athens, nos. 169, 201, 202, 186; see Wide, *J.d.I.* 1899 p. 196 Fig. 58.

[5] Above pp. 89, 98. [6] See p. 117 above.

[7] The gap described by Dr. Karo *Ath. Mitt.* 1920 p. 133 has been filled. The clay models shew that the tripod-stand was at home in Greece as a vase-form in early Geometric times. *Arch. Anz.* 1934 p. 239 abb. 27.

[8] Karo *Ath. Mitt.* 1920 p. 129.

[9] Clay models, however, in graves have already been naturalized. *Arch. Anz.* 1934 p. 239 ab. 27.

[10] There is one at Delphi (*Delphes* no. 248 and nos. 252–4 may be fragments of others). The date is uncertain.

[11] *Tombs of Knossos* Pl. lxxxix*b*. Miss Lamb (p. 32, notes 4–6) follows Miss Richter (*Met. Mus. Bronzes*, 222) in ascribing certain rims and handles to bowls for these stands, and not to amphorae (surely hydriae is wrong) but no reconstruction is given. It is noteworthy that the fragments are decorated with representations of deep vases and not of bowls.

Besides the flat lavers with upright handles,[3] there are also deeper bowls [4] into which ' sirens ' peer. These had an everted rim. Later, when the rim grew higher, the human protome has also to be raised in order to look over, while the wings tilt round to sit on a flatter surface.[5] Early griffin [6] and lion protomes are found with ' sirens ' at Vetulonia on steep bowls, but griffins with tall knobs and long ears have a different orientation of the head, so that instead of hanging off a steep bowl [7] they stand nearly upright on a more level surface.[8] In the La Garenne tripod [9] they are comfortably settled on a dinos. These oriental creatures never invaded the tripod-lebes.

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[1] *E.g.* Athens (probably) no. 10646; *Olympia* no. 911. One was said to have been found at Pólis (see *Ithaca* iii Fig. 22, and p. 72). Cf. a clay vase (*Arch. Anz.* 1933 p. 274) from the Kerameikos and the bulls' heads on laver-handles in Mouliana, grave A (Αρχ. Εφ. 1904 p. 30); date, Protogeometric.

[2] *Memoirs of the American Academy at Rome* III, no. 73, Pl. 51.

[3] In the sixth century at any rate their successors with horizontal handles stood on tripodiskoi. Filow, *Trebenischte* p. 76.

[4] Kunze *Bronzereliefs* p. 270 nos. 48 and 49, from Vetulonia. The wings of no. 13 (*Olympia* no. 783) are bent over to lean against such a rim. See the Olympia cauldron, no. 582a, mentioned p. 74, above.

[5] *E.g.* Kunze no. 30, *Delphes* Pl. 13, 4 (not 3). Cf. the shape of the bowl on the Berlin aryballos (see p. 108, above).

[6] Besides little or no knob and cat's ears, deep-bowl griffins appear to have heavy jowls, short tongues and thick necks with curls on them. In fact, they are like dragons, while later griffins are more like snakes. The following appear to be deep-bowl griffins: (1) from Samos; (2) from Perachora, *I.L.N.*, May 2 1931; (3, 4) *Olympia* nos. 793 and 792; (5) Berlin; (6) *Delphes*, Pl. x no. 5. I have to thank Professor Beazley for allowing me to study his collection of photographs.

[7] Samos and Perachora may provide the necessary evidence for dating the beginning of the griffin series. I do not agree with Dr. Kunze (*op. cit.* p. 279) that all the finds of the Bernardini and Barberini tombs can be placed in the eighth century. The daedalic protome with layer hair from the former (*Memoirs of the American Academy at Rome* iii Pl. 45) and a panther on a situla from the latter (*op. cit.* v Pl. 19) are more likely to belong to the second half of the seventh century. See also *id.* iii Pl. 38, 11, griffins with hare's ears; Pl. 66, dragons with long ears.

[8] Note the position of the creatures on the orientalizing vases from Arkades *Annuario* x–xii pp. 315, 324; *L.A.A.A.* xii Pl. iv; cf. other griffins *Delphes*, Pl. x.

[9] *Olympia* p. 115.

## APPENDIX I

I owe the following list of b.f. and r.f. Attic vases connected with cooking to Professor Beazley. The best tripod is the earliest. Except for the struts, the left-hand tripod of fragment b under no. 1 below is a completely satisfactory tripod-lebes. Nos. 3–9 seem to aim at representing tripod-cauldrons, but the type has altered or been forgotten.

1. Fragments of a b.f. volute-krater in Athens (Graef, Pls. 41, 42, no. 654*a*, *b*). About 540–30 B.C.: (*a*) Silens and nymphs busied about a feast and tending a dinos with swivel handles, on a tripod-stand with lion's feet, which sits on the fire; (*b*) shews two tripods; one with handles shewn in front, the other better arranged. These and a pile of dinoi are prizes.

The following deal with the Pelias legend.

2. B.f. neck-amphora in London (B .221; *C.V.A.* iii, H.e. Pl. 54, 1; Gerh. *A.V.* Pl. 157, 1, 2). Late sixth century. Medea, Pelias, and daughters watching the ram on the fire. A deep handleless dinos sits on a stand. To remove this pot will be very difficult.

3. B.f. hydria in London (B. 328; *C.V.A.* iii, H.e., Pl. 86, 4). The Leagros group (Beazley *Attic Black Figure* p. 45, no. 53). About 500 B.C. Ram in a dinos on a tripod-stand. Pelias, Medea, a Peliad.

4. B.f. oinochoe in the Cabinet des Médailles (no. 268; De Ridder *Vases Peints* p. 178; *C.V.A.* Pls. 62, 12 and 64, 1). Early fifth century. Ram in a dinos, on a tripod-stand. The handles hang down. A man stoking the fire and a woman.

5. B.f. oinochoe in the Louvre (F. 372; Pottier *Album* pl. 86). Early fifth century. Ram in dinos on the fire, Medea and a Peliad. One handle rises from the only leg, which appears to be affixed to the dinos. No lion's feet.

6. R.f. hydria in London by the Copenhagen painter (E. 163 *C.V.A.* Pl. 70, 4, iii, I.C.). About 480 B.C. Medea and Pelias, watching the ram on the fire. This time it sits in a tripod-pot without handles. This pot cannot leave the fire. Cf. Aesch. (*Frg.* 1), τὸν μὲν τρίπους ἐδέξατ' οἰκεῖος λέβης ἀὲι φυλάσσων τὴν ὑπὲρ πυρὸς στάσιν. If the play quoted is the Athamas, as it seems to be, τὸν must be the ram and οἰκεῖος must have its original meaning of 'belonging to the house,' a usage that Prof. Beazely thinks is quite in the manner of Aeschylus.

7. R.f. stamnos by the same painter in Munich (2408, J. 343, Gerh. *A.V.* Pl. 157, 3, 4). The tripod and ram are almost exactly the same as on no. 4.

8. R.f. fragment in Athens (Acropolis 983; Langlotz, Pl. 78). Two legs of a tripod on the fire.

9. R.f. stamnos in Berlin (F. 2188; Neugebauer, Pl. 57); about 480 B.C. Medea and cook with sword; ram in lebes on the fire. Combined tripod-stand and tripod-lebes with lion's feet. One handle rises directly from

the leg in the centre: the other must be exactly opposite between the other two legs.

10. R.f. pyxis in the Louvre (C.A. 636; Daremberg and Saglio *s.v.* Medea Fig. 4876, by the Painter of Heidelberg 209; about 430 B.C. Pelias hirpling towards the tripod, which is not on the fire. Three handles on fixed rings, rising directly from the legs. Three rivets in the front leg, lion's feet.

11. R.f. cup in the Vatican (*Mus. Greg.* ii Pl. 82, 1; *Arch. Zeit.* 1846, Pl. 40; phot. Alinari, 35803–4). About 430 B.C. Pelias being led to the tripod, which is as in the last.

The following white-ground lekythoi deal with the Jason legend (references given me by Miss Haspels).

12. Syracuse, from Gela (*Mon. Antichi* vol. xvii p. 122 Fig. 88); about 500 B.C. Aison is being rejuvenated. The pot on the fire looks like a dinos, but from the middle of its sides spring legs ending in lions' feet. Probably a tripod-stand is intended. Haspels, *Attic Bf. Lekythoi* p. 227, no. 38.

13. Chiusi, Collection Bonci Casuccini (*Mon. Ant.* xxx p. 535 Fig. 5; Haspels p. 241 no. 6); early fifth century. Little boy, leaping out of a dinos on the fire. The dinos stands on a tripod-stand.

14. Leiden, Gerh. *A.V.* lxix, lxx, 5, 6; Haspels p. 241 no. 5. A replica of the last, except for the rod in the hand of the figure sitting on the left of the cauldron.

On the same subject:—an Etruscan mirror in the Cabinet de Médailles (Gerh. *Etr. Sp.* ccclii, 1). A youth going to emerge from a lebes. The lebes is impressionistic and there is no fire.

Besides the relief in the Lateran mentioned above, p. 75, note 3, there is a marble relief on a Hadrianic sarcophagus (Gütschow *Röm. Mitt.* 1934, Pl. 20)—'a copy of a Greek work contemporary with the Parthenon.' In the centre background a Peliad; in front Pelias is being dragged by the other Peliad into a kind of pot set on a miserable 'Etna' which cannot possibly support it. Comparing this with the cooking-vessel of the Lateran relief mentioned above, or the tripods on late fifth-century reliefs at Athens (Svoronos Pls. liv, clxxxi), I postulate a provincial origin, preferably in a locality where tripod-cauldrons are unknown.

## APPENDIX 2

### *Tripod-cauldrons in Laconia*

### (a) *Bronze*

A bronze fragment of a very large tripod-handle[1] was found in the precincts of Athena Chalkioikos at Sparta (Fig. 17*d*). It had an open zig-zag and an animal above—probably a horse, for the attitude of the head and legs is just that of the Ithaca horses, and they too looked like lions before cleaning (see *Ithaca* III, Fig. 11). The legs are made in a solid block.

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[1] The Museum label states that it is a Geometric lion. It is therefore probably, though not certainly, found in the Geometric layer.

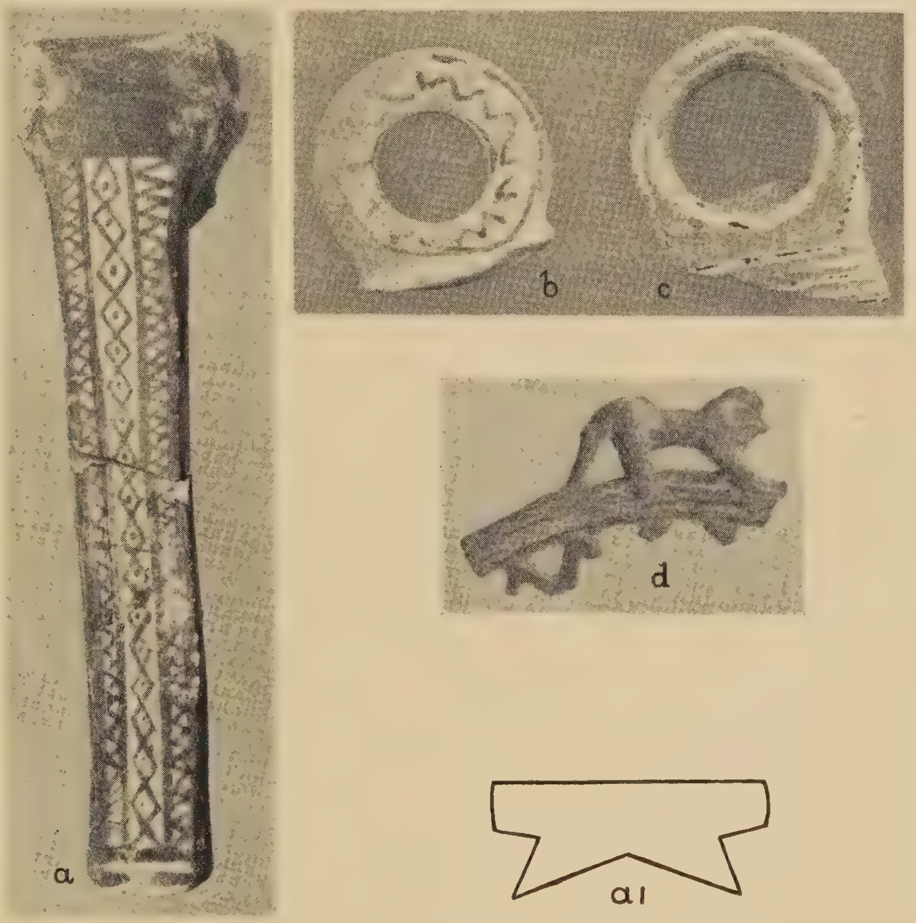

FIG. 17.—FRAGMENTS OF TRIPOD-CAULDRONS AT SPARTA.
Scale: *a–d*, 1 : 2; *a*1, 1 : 1.

### (b) *Clay*

A leg of a tripod-cauldron found by Tsoúndas at Amyklai, imitates the patterns of tripods with double T sections (Fig. 17*a*) and its section (Fig. 17*a*1) is spreading and almost a double T. The centre pattern is proper to vase-painting and is of late Geometric or sub-Geometric date.

Miss H. Thomas picked up the handle of a clay tripod with a zig-zag like the handle of *Ithaca* III tripod 6, on the site of Amyklai.

A similar handle (Fig. 17*b*) was found at Artemis Orthia. Another handle (Fig. 17*c*), with a rounder section, from this site, may also belong to a tripod-cauldron. It looks as if tripod-cauldrons were rather popular in Laconia.

I wish to record a special debt of gratitude to Payne in connection with this paper, and to Prof. Beazley who revised it twice.

Sylvia Benton.

# THE CHEMICAL COMPOSITION OF ARCHAIC GREEK BRONZE

THIS paper sets forth the chemical analysis of a number of copper objects from Greece of the Late Bronze and Early Iron ages. The majority of these objects were picked up by me during my wanderings, and so are not exactly stratified or datable, but nevertheless may be assigned with tolerable certainty within the limits described. The collection from the Argive Heraeum was found in the temple rubbish-heaps; the pieces of determinate form are paralleled from Geometric times, so it is highly probable that the whole of this deposit is of the same date.

*a.* Pin, Argive Heraeum rubbish-heaps. Length 16 cm., diameter 2 mm. Bent in the middle to an acute angle. The head has a small knob and four horizontal ribs below; the form resembles Waldstein *Argive Heraeum* no. 121. The metal is coated with carbonate, but partly unrusted inside, and bends easily.

*b.* Pin, Argive Heraeum rubbish-heaps. Section of shaft square, with disc-head at right angles to it, whence projects a small grooved knob continuing the line of the shaft. The form resembles *ibid.*, no. 782. The metal is yellowish in colour, much oxidized and brittle.

*c.* Ring, Argive Heraeum rubbish-heaps. Formed by bending a strip of bronze round on to itself so that a quarter of the circle overlaps. The diameter is about 1·8 cm., the width of the strip 0·7 cm. The form resembles *ibid.* no. 961 save that it is not grooved. The metal is yellow, bendable and not brittle.

*d.* Thick pin, Argive Heraeum rubbish-heaps, of 0·5 cm. diameter, resembling *ibid.* no. 62. The object is almost entirely oxidized, but there remain fragments of the original yellow metal.

*e.* Crescent-shaped earring, Argive Heraeum rubbish-heaps. Diameter 2½ × 4 cm. resembling *ibid.* no. 2169. The metal is completely converted to oxide.

*f–k.* Formless fragments, Argive Heraeum rubbish-heaps; the last two are fragments of pins.

*l.* Part of a ring of square section, Argive Heraeum rubbish-heaps. Diameter 0·5 cm.

*m.* Bronze spiral, Argive Heraeum, lying loose in a trench through the prehistoric layer, but probably of later date. Resembles *ibid.* no. 820. The diameter is about 1·5 cm., the thickness of the metal 0·2 cm. The metal is bright yellow and bends easily.

*n.* Rosette, from L.H. tomb, Argive Heraeum. A thin circular plate of copper, 2·2 cm. in diameter, with a small hole in the middle and jagged edges. The metal is yellow-reddish.

*o.* Highly rusted fragment from Samian Heraeum, kindly given to me by Prof. Buschor in 1928, and dating to about the seventh century.

*p.* Piece of a bronze plate, Olympia. Perhaps part of a catch-plate fibula, but unengraved. The metal bends easily.

*q.* Spiral consisting of six winds of wire, perhaps intended to be worn on the finger, Chorsiai. Diameter 1·5 cm., height 1·2 cm. The wire is of semicircular section, flat on the inside; it bends easily. This specimen was kindly given to me by Miss Benton.

*r.* Circular rosette, Asine (Argolid), about 2·5 cm. diameter, with a hole at the centre and four very small stitch-holes round it. The metal is thin and badly rusted.

*s–u.* Ithaca, rivet and fragments of two tripods from the British excavations. These pieces were brought to me by Miss Benton.

*v.* Leaf-shaped arrowhead, Aegina, Oros site. The object has a strongly-marked midrib with a piece of metal attached, probably owing to a flaw in the casting. The wings and point are broken; at the fracture near the point there projects a core of harder material, perhaps unoxidized metal. The length is 3·7 cm., greatest width 1·2 cm., and thickness 0·5 cm.

*w.* Pin, Thermi (Lesbos), badly rusted, given to me by the kindness of Miss Lamb. Early Bronze age.

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*Note.* The following analyses were carried out at Queen's University, Belfast. I would like to thank the authorities of the University and of the Chemistry Department for the great assistance they have afforded me in this work. A dash indicates that the metal was not tested.

| | Cu. | Sn. | Fe. | Pb. | Sb. | Zn. | Ni. | As. | Bi. | Ag. | Co. | Au. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *a* | 74·43 | 1·01 | 0·88 | 0·16 | 1·25 | 0 | 0 | — | 0 | 0 | 0 | — |
| *b* | 69·64 | 3·78 | 0·6 | 1·15 | 0·68 | 0 | 0 | 0 | 0 | 0 | 0 | — |
| *c* | 78·85 | 2·63 | tr. | 3·64 | 0 | tr. | 0 | 0 | 0 | 0 | 0 | — |
| *d* | 64·76 | 9·00 | 0·66 | 0·06 | 0 | 0 | 0 | 0 | 0 | tr. | 0 | — |
| *e* | 61·58 | 6·16 | 0·2 | 0·22 | 1·12 | 0 | 0 | 0 | 0 | 0 | 0 | — |
| *f* | 47·76 | 8·22 | tr. | 0·08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | — |
| *g* | 45·04 | 5·72 | tr. | 0 | 0 | 0 | tr. | 0 | 0 | 0 | 0 | — |
| *h* | 77·15 | 6·55 | tr. | 0 | 0·46 | 0·43 | 0 | 0 | tr. | 0 | 0 | — |
| *i* | 63·23 | 3·09 | 0·07 | 0·02 | 0·15 | 0 | tr. | 0 | 0 | 0 | 0 | — |
| *j* | 75·14 | 2·76 | 0·99 | 1·89 | 1·49 | 0·19 | 0 | 0 | — | 0 | 0 | — |
| *k* | 58·22 | 9·49 | 0·59 | 0 | 1·22 | 4·36 | 0 | 0 | 0 | 0 | 0 | — |
| *l* | 63·72 | 6·00 | tr. | 0·08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | — |
| *m* | 87·65 | 6·1 | tr. | tr. | 0 | 0·41 | tr. | 0·44 | 0·16 | 0 | 0 | — |
| *n* | 95·25 | 0·22 | 0·24 | tr. | tr. | 0 | 0 | — | 0 | 0 | 0 | — |
| *o* | 56·93 | 7·19 | 0·14 | 0·03 | 0·35 | 0 | tr. | 0 | 0 | 0 | 0 | — |
| *p* | 90·08 | tr. | 7·02 | 1·53 | 0 | 0·1 | 0·93 | 0·32 | 0 | 0 | 0 | 0 |
| *q* | 81·22 | 2·84 | 1·00 | 0 | 5·47 | 0·66 | 0 | 0 | 0 | 0 | 0 | — |
| *r* | 39·89 | 12·36 | 0·23 | 0 | 0·62 | 0·97 | 0 | 0 | 0 | 0 | 0 | — |
| *s* | some | 1·25 | 1·2 | 1·38 | 5·59 | 0·2 | 0 | 0 | — | 0 | 0 | — |
| *t* | 97·33 | 0·42 | 0·95 | 1·08 | 0·35 | 0 | 0·92 | 0 | 0 | 0 | 0 | — |
| *u* | 98·00 | 0 | 0·52 | 0·17 | 0·06 | 0·11 | 0·55 | 0 | 0 | 0 | 0 | — |
| *v* | 72·6 | 7·63 | 0·19 | 0·11 | 0·5 | 0·38 | 0 | 0 | 0 | 0 | 0 | — |
| *w* | 78·1 | 3·26 | 0·19 | 0·72 | 0·25 | tr. | 0 | 0 | 0 | tr. | 0 | — |

These pieces vary considerably in composition, but at the same time have certain common characteristics, complete absence of cobalt and rarity of silver, bismuth and arsenic. Though we cannot at this date exclude the possibility of the use of scrap in casting, which was frequent in Roman times,[1] and would confuse the chemical evidence, it will be worth while to divide these analyses into groups according to their components. Tin occasionally occurs as an ore-impurity of copper, but in nearly all the cases under review is probably an alloy, though its presence may sometimes be due to the addition of scrap. Iron is constantly present, as in all copper, and is not sufficiently characteristic to require mention.

Group A: *h*, *k*, *q*, *r*. These contain no lead, but some zinc and antimony, which may sometimes have been added; Iron age and perhaps Bronze age. The composition may be local; it is unparalleled in Egypt, Hungary or Anatolia, and in Italy the only possible instance is a Late Bronze-age ingot from Cannatello.[2] Bronze alloyed with antimony is common in Central Europe and known from Anatolia; there is a specimen from Falerii,[3] and one or two of the Bronze-age date from Macedonia.[4] Fahlerz containing much antimony was worked anciently at Kalirachi on Thasos.[5]

Group B: *c*, *d*, *f*, *l*. These contain a little lead, no zinc or antimony, occasionally nickel and silver; Iron age. The metal is pure and probably derived from malachite, so its source would be difficult to decide, as the oxide ores of copper have less characteristic impurities than the sulphides. Parallels could be quoted, such as the ores from Chalasmenon Enkremnon on Kos [6] or Kappedes in Cyprus,[7] but they are hardly of value.

Group C: *a*, *b*, *e*. These contain a little lead, more than 1% antimony and no zinc; Iron age. No parallels are known from Egypt, Anatolia, the Balkans, Hungary or Italy. A specimen from Gona [8] has high antimony, but also nickel. As this group comes from the Argive Heraeum, one might compare the slag from Corinth,[9] save that the latter has also arsenic and bismuth and traces of cobalt and silver.

Group D: *i*, *o*. These contain little lead, antimony or nickel, and no zinc; Iron age. They are unparalleled save perhaps by the late La Tène lump from Ripač in Bosnia.[10]

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[1] Pliny *N.H.* xxxiv 9, 97.

[2] Mosso *Atti Accad. Lincei, Mem. Classe Scienze morali,* V, xii (1908) 479.

[3] Villari *Monumenti Antichi* iv (1894) 374.

[4] *B.S.A.* xxviii 195.

[5] de Launay *Géologie de Lesbos.*

[6] *Roman Mines in Europe* 266.

[7] *B.S.A.* xxx. 74.

[8] The date is probably Mycenean. It is to be published in Mr. Heurtley's book *Prehistoric Macedonia.*

[9] *Roman Mines in Europe* 253.

[10] Radimský, *Wissenschaftliche Mitteilungen aus Bosnien und Herzogowina* V 29.

Group E: *j* and, perhaps, *v*. These contain high lead and antimony, a little nickel and no zinc. This composition is not paralleled in neighbouring countries, but is akin to several Greek ores, such as Sacili in Macedonia, exploited in the Bronze age,[1] Konduro on Seriphos [2] and Sturfaka,[3] both probably not worked before the classical period.

Group F: *p*. This contains high lead and nickel, low zinc and arsenic, no antimony; from Olympia, probably of the Iron age. The composition does not agree with Group J from Ithaca, nor with analyses from Bronze age Greece, Anatolia or the Balkans. It is perhaps paralleled by the series of 26th Dynasty statuettes [4] and the lumps from Marzabotto,[5] less certainly by the ore from Malvito,[6] where the evidence for ancient working is uncertain.

Group G: *n*. This is very pure copper, with traces of lead and antimony; Argive Heraeum, Late Bronze age. No close parallel can be found among the inadequate analyses of Bronze age material from the Greek mainland, but the composition is similar to that of a few Cretan bronzes.[7] It also resembles the slag from the Bronze age mine of Chrysokamino,[8] but not the ore from Sklavopoula or Kampanou, which are believed not to have been worked so early.[9] Its composition does not agree with published analyses from Egypt or Sicily. There are many similar fragments from the Po valley, but as no negative components are mentioned in the latter the comparison cannot be pressed. An ingot from Teti (Sardinia), which had connections with the Aegean, may also be cited,[10] though like the sword from Arkalochori it contains silica, whereas Chrysokamino, if this indeed be the source, is situated in limestone; but silica may have been added as flux.

Group H: *g*. This contains only traces of nickel; Argive Heraeum, Iron age. A 19th Dynasty axe is perhaps parallel,[11] but there is nothing similar from Anatolia, the Balkans, Italy, or Bronze-age Greece.

Group I: *m*. This contains low zinc, arsenic and bismuth, traces of lead and nickel. It is not paralleled in Egypt, Anatolia, the Balkans or Bronze-age Greece, but partially resembles an ingot from H. Triada and axes of the Early Bronze age from Etruria,[1] ore from Boccheggiano in the same district, and more doubtfully a statuette from Coppa Nevigata,[2] a site which appears to belong to the Early Iron age.

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[1] *Journal of the Royal Anthropological Institute* 1932, 153.

[2] *Roman Mines in Europe* 260.

[3] *Ibid.* 240.

[4] Rathgen, in Diergart *Beiträge aus der Geschichte der Chemie.*

[5] Willers *Zeitschrift für Numismatik* xxxiv (1924) 193.

[6] *Roman Mines in Europe* 74.

[7] *E.g.* sword no. 7 from Arkalochori (Hazzidakis *B.S.A.* xix 35), or a double axe from H. Triada (Mosso *Origini della Civiltà mediterranea*), or an axe from Psychro, though no negative constituents are given (Mosso *Atti Accad. Lincei, Mem. Classe Scienze morali*, V. xii (1908) 479).

[8] For slag from here cp. *Roman Mines in Europe* 270. A specimen which I examined contained 0·56% lead, 0·1% antimony, no arsenic.

[9] *Roman Mines in Europe* 267–8.

[10] Baux *Matériaux* (1884) 202.

[11] Hertz *Revue Archéologique* 1927, i, 48.

Group J: *s*, *t*, *u*. Fragments of tripods from Ithaca, varying considerably in alloy, but probably derived from the same source. They are not paralleled anywhere, and the ore may have been local.

Group K: a piece of slag from Anthedon, containing up to traces of copper, 66·19% iron, 0·08% lead, 0·27% zinc, no arsenic, antimony, tin or gold. On a knoll south-east of the city-wall, where the specimen was picked up, there was discovered a hoard of bronze tools of the eighth–seventh century B.C., scraps of bronze, some slag, and coarse unpainted pots.[3] This area is devoid of prehistoric sherds, which are confined to the north side of the acropolis facing the sea, so the slag probably belongs to the hoard. Copper ore may have been found locally, as there are small eruptive outcrops round the plain. But the slag resembles those from Melitaia, Echinos Hill and Hypate Station,[4] and may be derived from refining raw copper imported from Othrys.

It is noteworthy that none of these analyses resemble the ore from the source of the Asopos above Mycenae,[5] so this mine, which is poor in ore and has yielded no certain traces of ancient workings, was probably not exploited in the Late Bronze or Early Iron ages.

No analyses of Greek bronzes of the Iron age have been published with sufficient impurities for use to be made of them. In a sixth-century fragment from Athens [6] only lead was tested, a fragment of a fifth-century charioteer statue is hardly more valuable.[7] From the Bronze age we have more tests. Those from the Peloponnese are not sufficiently detailed. From central Greece the only valuable analysis is that of an axe from south Thessaly,[8] whose composition is dissimilar from all the Othrys ores. Traces of zinc occur in Thessalian Middle Helladic bronze,[9] but though this metal is found on Othrys, it is not sufficiently characteristic to determine the source.

We have a fairly good collection of analyses from Crete in Middle Minoan and Late Minoan III times. Lead is regular, usually in small quantities; traces of antimony and arsenic are frequent, zinc rare, nickel absent. The analyses do not resemble the ores of western Crete. Some pieces may have come from Chrysokamino, but more than one source seems to be indicated. They occasionally resemble the ores from Naoussa (Paros),[1] and perhaps from Gaudos,[2] but the analysis of the latter is most unsatisfactory. On Crete itself Chrysokamino is the only certain Bronze-age working.

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[1] Mosso *Origini della Civiltà mediterranea.*

[2] Mosso *Monumenti Antichi* xix (1908) 349.

[3] Rolfe *American Journal of Archaeology* 1890, 96.

[4] *Roman Mines in Europe* 240–41.

[5] *Ibid.* 253.

[6] Phillips *American Anthropologist* xxiv (1922) 129.

[7] Schwabe *Jahrbuch des deutschen archäologischern Instituts* 1886, 163.

[8] *Reports of the British Association* 1929, 264.

[9] Tsoúndas, *Dimini and Sesklo.*

Though the results of this paper seem partially negative, it appears that in the Late Bronze and Early Iron ages the Greeks were using copper ores from several districts. Some of the groups described above point to connections with Italy, where the mines of Etruria were worked from early times. In many cases local sources were probably used; but as such mines were often worked out and have not been rediscovered, it has not been possible to test their ores. The clearest connection is that of Group G with Crete, shewing that the inhabitants of the Argolid in Mycenean times were obtaining metal thence.

I may conclude this paper with the mention of some pieces of iron slag from Greek sites, picked up during my wanderings. They are probably derived from smithies, where blooms obtained in commerce were re-forged. Such ancient blooms as have been tested are never pure, but contain some slag which would be removed by refining. The Greeks may have obtained some iron locally; ore occurs especially in Boeotia,[3] Attica,[4] Laconia,[5] and some of the islands.[6] It is certain that much was imported from Elba[7] and Etruria, some from the land of the Chalybes[8] and elsewhere. I have found slag at Kerinthos,[9] Eretria (with ore),[10] Pagasai,[11] Tithorea,[12]

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[1] *Roman Mines in Europe* 264.

[2] Mosso *Origini della Civiltà mediterranea.*

[3] *Iron Ore Resources of the World* (ed. XI Internationale Geologenkongress, Stockholm, 1910); Scott *Journal of the Iron and Steel Institute*, 1913, i, 447.

[4] At Laurium, near Chaïdari, Grammatikon, and elsewhere. Cf. *Roman Mines in Europe* 247, 252; Kordellas, Ἡ Ἑλλὰς ἐξεταζομένη γεολογικῶς καὶ ὀρυκτολογικῶς.

[5] *Roman Mines in Europe* 254–6; Philippson *Der Peloponnes.*

[6] Cf. *Roman Mines in Europe* 256–64.

[7] For the early date of the Elba workings cf. *Roman Mines in Europe* 68; Mellini, *Bollettino di Paletnologia italiana* 1879, 84; and the amount of iron found at Perachora.

[8] Cf. Aeschylus *P.V.* 733; Cratinus ap. Pollucem vii 107; Xenophon *Anab.* V. 5, 1; and many later writers. Some locate them near the Halys (Ammianus Marcellinus xxii 8, 21), others behind Trapezus (Tzetzes *Chil.* x 338).

[9] A slag specimen, partly fused, contained 46·87% iron, no copper or lead. This site was presumably occupied by refugees from the sack of about 600 B.C., as it contains only late pottery (cf. Theognis 891). The town-wall is built of small rough stones, with occasional squared blocks. The name Kerinthos should date from the Early Bronze age, but its site at that date has not yet been discovered. It may have been one of the unidentified prehistoric settlements in the plain of Vatonta north of Chalkis.

[10] A slag specimen contained 49·87% iron.

[11] A specimen contained 61·44% iron.

[12] A specimen contained 64·12% iron. The amount of silica was small, and this may be rusted iron and not slag.

Aptera,[1] Matala,[2] and Aules (Ithaca).[3] At Alymropotamo in Euboea are old workings for iron and argentiferous lead;[4] remains of furnaces are known; a piece of slag, rather hard and partly fused, contained 64·39% iron.

O. Davies.

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[1] A specimen contained 53·11% iron. The site contains mainly late objects, and was a centre for mercenaries in Hellenistic times, but I have seen a polished stone axe thence.

[2] A specimen contained 62·88% iron. The ancient name of the village, Metallum, should indicate mines, but I heard of none. A specimen of sand which I took was kindly examined by Mr. Hartley; it contained about 3% heavy material including some flaky unrolled pieces of iron ore from some neighbouring deposit. Gold was thought unlikely to occur in this context.

[3] A specimen contained 66·71% iron. Iron slag is said to occur also east of Vathý (Ithaca). There is ore on Atokos, perhaps the source of Pliny's *lapis Taphiusius* (*N.H.* xxxvi 21, 150), as the Taphians were located there.

[4] Kordellas, Ὁ μεταλλευτικὸς πλοῦτος τῆς Ἑλλάδος : *id.*, Ἡ Ἑλλὰς ἐξεταζομένη γεολογικῶς καὶ ὀρυκτολογικῶς.

# EXCAVATIONS AT KATO PHANA IN CHIOS

(Plates 27–37)

## Introduction

"Φάναι, λιμὴν βαθύς, καὶ νεὼς Ἀπόλλωνος καὶ ἄλσος φοινίκων."[1] Though the anchorage at Kato Phana is not as good as Strabo implies, there is no doubt that here was the site of his temple,[2] a site which has preserved, with only a slight distortion, its ancient name. From other sources we learn that the Chiots were defeated by the Athenians in a battle there during the summer of 512 B.C. and that the wine grown on the spot was much appreciated.[3] Numerous arrow-heads may or may not be relics of the battle, and a struggling vineyard among sandhills forms a slender link with the nobler vineyards of the past.

The important campaigns of Dr. Kourouniotis in Chios during 1913–15,[4] besides throwing much light on the antiquities of the island, introduced the sanctuary itself to the archaeological world. The eastern end of the temple foundations was brought to light, the sanctuary walls were located and partly traced, and numerous votive objects recovered. Among these, fragmentary vases of the Naukratite class raised a question of paramount interest: could they be of local origin? This question was still undecided when, in 1925, Miss Price published her epoch-making analysis of East Greek pottery, and she finally came to the conclusion that they were made at Naukratis.[5]

It became obvious that from Chios alone conclusive evidence could be obtained. Moreover, during the years which had elapsed since Kourouniotis's last investigations in the island were interrupted by the war and other duties, our knowledge of East Greek art had progressed to a point when to define the contribution of its more prominent centres had become a pressing need. One of the chief centres, according to literary evidence and general probability, must have been Chios.

These considerations prompted the British School in 1934 to apply for a permit to undertake further work at Kato Phana. Owing to the great generosity of the Greek Archaeological Service and of Dr. Kourouniotis himself, this permit was granted, and we are deeply sensible of the obligation.[1] In April I started excavation, assisted by Miss Six and by Mr. Brock, who made a special study of the architecture and whose notes on this and other matters are incorporated in the following report.[2]

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[1] Strabo XIV i 35. The modern pronunciation of the name is Phaná.

[2] The evidence is summarized by Kourouniotis Δελτ. i. 73.

[3] Thucydides viii 24, 3; Virgil *Georgic* ii 98.

[4] Δελτ. i 64 ff., ii 190 ff.

[5] *J.H.S.* xliv 203 ff.

I propose to take first the architectural remains in chronological order, then the finds, but may anticipate one point by warning the reader that the early Christian period was one of remarkable and catastrophic activity.

The site selected by the earliest inhabitants for their *temenos* was a spur of the hill east of a small valley. This spur was built on, enclosed, re-inclosed and rebuilt, so that from the ninth century onwards we have a long tradition of worship on the site, first pagan, then Christian, ending with the small church which crowns the eminence to-day.

## Architectural Remains

*Wall of Geometric (?) period* (Pl. 27). On the west are two fragments of a collapsed wall, built of irregular limestone blocks of various sizes. They are shewn in solid black on the plan. As a thick, undisturbed deposit of Geometric objects lay on the west side of the more northerly portion, while the more southerly one was associated with similar finds, we believe the wall to be contemporary with the deposit. It seems to be an enclosure wall, but whatever sanctuary lay inside has disappeared. The most suitable site for such a sanctuary would be the area covered by the later temple and the basilica.

*Archaic enclosure wall* (Pls. 27, 29*a*, *b*). The next phase is marked by a curved wall, terrace-like on the west and north where it is well-preserved and where it attains a height of 3·5 metres. Dr. Kourouniotis uncovered three sections of it,[3] and starting from these, we traced its course for 74 metres, southwards to where it is cut off by the rise of the hill and the intersection of a later wall, eastwards till it eluded us among Byzantine houses and olive trees. This wall has only one face, and a thick backing of stones and earth. Most of it is built of small stones roughly dressed with still smaller stones packed between them, but on a patch of the west wall are some oblong blocks, perhaps re-used from an earlier structure. The material is nearly always local grey limestone, but there are a few pieces of a curious red stone which will be discussed shortly, and one piece of marble, probably from some broken altar, column or statue. North of the oblong blocks is a stretch of masonry where a slight set-back can be detected in the upper courses (cf. Δελτ. i 78 Fig. 14). I do not think that this set-back marks work of a later period, for the style above is usually identical with that below. In one place, an oblong outlet for draining water from inside has been constructed.

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[1] I should like to add my warmest thanks to Mr. Madias, Mr. Argenti and Mr. Choremes for making our visit to the island both easy and pleasant. Mr. Madias, assisted by Mr. Pappaiannoudes, gave us invaluable help in inspecting sites and working at the Chios Museum.

[2] The abbreviations used in this paper, in addition to those normally employed by the *B.S.A.*, are as follows:—

*Aegina* = Furtwängler *Aegina, das Heiligtum der Aphaia.*
*Ephesus* = Hogarth *Excavations at Ephesus.*
*Lindos* = Blinkenberg *Lindos.*
*Milet* = Wiegand *Milet.*
*Naukratis* = Petrie and Gardner *Naukratis.*
*Sardis* = Butler *Sardis.*

[3] Δελτ. i 78, 79, Fig. 14; ii 190, 191, Fig. 1 and α–β, γ–δ, ε–ζ on Fig. 3.

To the plateau contained by the wall one had access, not by means of a ramp as at Miletos,[1] where an archaic enclosure has points in common with ours, but by two flights of steps which are bonded with the wall and therefore contemporary (Pl. 29*a*). They rise to a projecting terrace or platform, 1·6 m. wide. For the steps there are also parallels at Miletos, one of which belongs to the first half of the sixth century,[2] but they are in single flights, not double like ours.

Evidence for dating is given by the deposits in front as well as behind the wall. Nothing could be found below, since the foundations rest on bed-rock, and the few sherds recovered from inside the wall and the steps are inconclusive. The deposits immediately behind on the west and north-west, which must have been thrown down to support the wall while it was being constructed, yielded a few Naukratite sherds of indefinite character at a low level, which might be styles A or B (see below) but are definitely post-geometric. Large tracts of the earth used as packing for the wall were, however, completely barren. Of the deposits outside, only the most important need concern us. At the foot of the wall on the north was a layer of dark earth, which I will call the M deposit, peculiarly rich in sherds and small objects. The latest sherds were Naukratite A without incision. As will be seen from the section (Fig. 1), this layer cannot antedate the wall, but must have been washed over or thrown down after the wall was finished. Not long after: the latest elements, the Naukratite A sherds and certain scarabs, must belong to the first twenty years of the sixth century. The wall itself, therefore, must be earlier than these but later than the geometric period.

The next event which can be deduced is a *wholesale reconstruction of the acropolis*. This reconstruction has left its traces in the large deposits of stones and closely packed limestone chips that were shot over the early wall. Had the chips included marble, we should have been certain that the reconstruction and the building of the marble temple coincided: even as things are, we can be practically certain, for the deposits containing the chips are dated by sherds to the second half of the sixth century, and the surviving architectural fragments which can be attributed to the temple point to the same period. Some of the chips are of the reddish stone to which we have already referred, and to which we will refer again in connection with a number of column bases of unknown origin.

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[1] *Milet* I viii 10–12, Pls. i, xiii 2.

[2] *Ibid.* 14–15, 119, Figs. 5, 6, Pl. ii. Other steps, *ibid.* 34, 35, Figs. 24, 25.

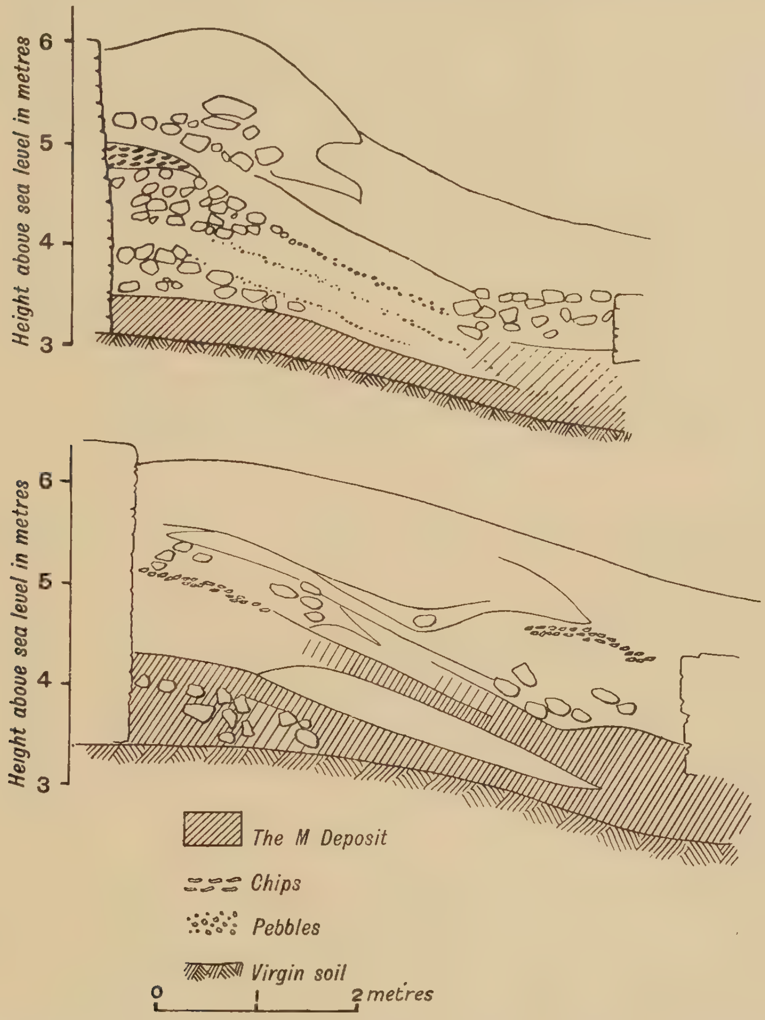
Height above sea level in metres
6
5
4
3
Height above sea level in metres
6
5
4
3
The M Deposit
Chips
Pebbles
Virgin soil
0
1
2 metres

Fig. 1.—Sections of Deposits Outside Archaic Enclosure Walls. B-B above, A-A below: see Pl. I.

*The temple* (Pls. 27, 28). The foundations of the eastern side, cleared by Dr. Kourouniotis, are 8·5 m. long: those on the north, uncovered by ourselves, are 25·70 m. long, and both are incomplete. We looked for traces of the missing west and south sides but found nothing. This is distressing but not surprising, for a small early Christian church is built directly above the foundations of the north-east corner, and the somewhat later basilica is supported on walls which descend to a low level: the builders of both edifices no doubt re-used the stones of the temple; and yet other stones were carried away, according to a prevalent local tradition, to make a church on the island of Psara.

There remain, however, some column drums and bases, a capital, and a number of mouldings that we have reason to believe were once part of the temple; also another series of column bases which are hard to place but which may be contemporary. This group of *early architectural remains* will now be described in detail.

1. Fragments of column bases in white marble. Fig. 2, nos. 10, 11, 16. They consist of numerous small pieces of roundels and two larger pieces from the lowest member of the base shewing the usual Ionic roundels and scotiae.

2. Fragments of column bases in red limestone, more numerous and slightly less orthodox. Fig. 2, nos. 1–5, 7–9, 12–15. The torus shews a capricious arrangement of convex and concave mouldings which, in many examples, alternate.

Since all other fragments from the temple are marble, these red column bases are a problem. They are obviously connected with the red limestone chips that are sometimes found in the fill outside the curved enclosure wall. There would scarcely have been time for an earlier set of red columns to have preceded the white ones, especially as the two sets cannot be far removed from each other in date. The red columns may have belonged to some other structure or may have been part of an early plan abandoned before completion.

3. Fragment of column base with bead and reel (Fig. 2, no. 6; Fig. 3). The diameter is ·80 m., and on the top is a round dowel-hole, of which the diameter is ·095 m. The fragment was found under the basilica and above the temple foundations, but what place it occupied in the temple is uncertain. Add the smaller fragment with similar ornament in Δελτ. i 84 Fig. 24, and compare the bead and reel on the votive bases and altars at Miletos, *Milet* I iii 153–6 Figs. 41–5. The earliest of these is early archaic: *ibid.* 153 Fig. 41.

4. Drums, various, built into late walls. A good conglomeration is illustrated in Δελτ. i 82 Fig. 22. There are a number of marble ones, of which the diameter varies from ·77 to ·92 m. and the height from ·25 to ·46 m. Also two red ones, diameter ·79 m., ht. ·185 m. and ·18 m.

5. Capital. The beautiful example reproduced in Δελτ. ii 193–4

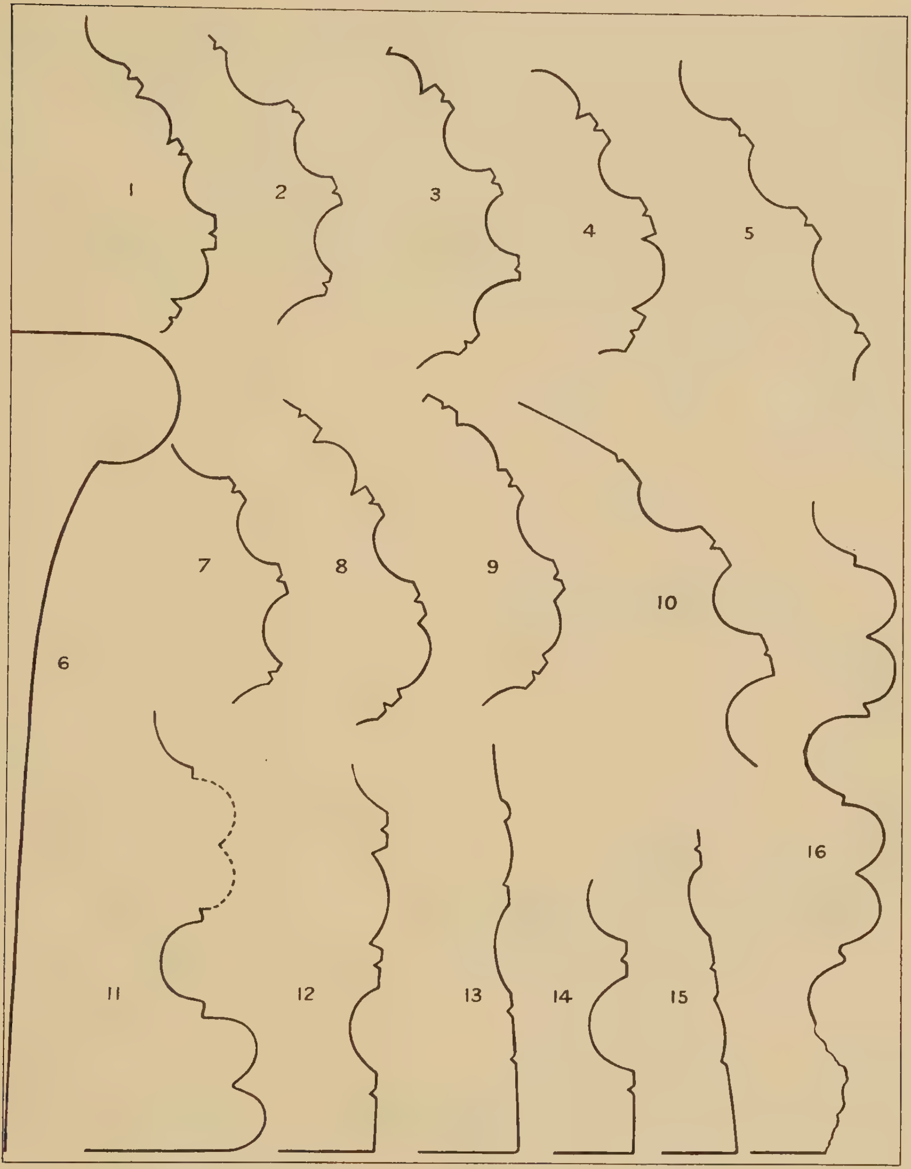

FIG. 2.—FRAGMENTS OF COLUMN BASES. Scale $\frac{2}{5}$.

Figs. 6α, β is the only survivor. See Robertson *Greek and Roman Architecture* 150, for comment on the palmettes. In one of our photographs (Pl. 30*c*, *d*) it is combined with no. 6, a bit of egg-and-tongue moulding. Both pieces are kept in the modern church, and it is very difficult to move the capital off the moulding.

7. Fragments, fairly numerous, from a cornice (Pl. 30*a*, *b*). Their height is ·23 m. The best appears in Δελτ. i 81 Fig. 21. Close in style and pattern is an angle-piece from Naukratis, to which Mr. F. N. Pryce has drawn my attention (*B.M. Sculpture* I i, B. 426, Fig. 214 = *Naukratis* I Pl. xiv 4).

8. Small pieces of a marble bead and reel moulding.

The evidence obtained in 1934 concerning the date of the temple supplements and confirms that of Dr. Kourouniotis. The temple is placed by him and Prof. Robertson at the end of the sixth century (Δελτ. i 85; Robertson *op. cit.* 331), and the latter demonstrates that it is more or less contemporary with temples in Paros and Naxos and at Pyrgi near Phana.

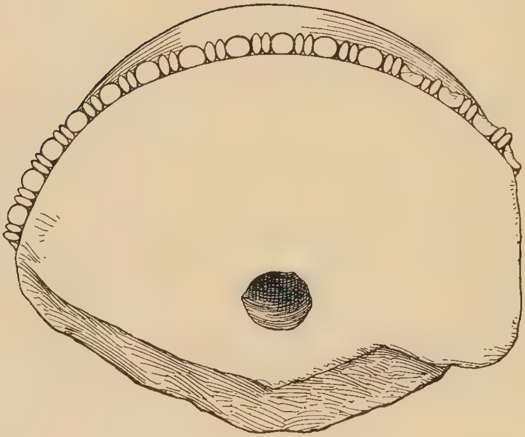

Fig. 3.—Column Base.

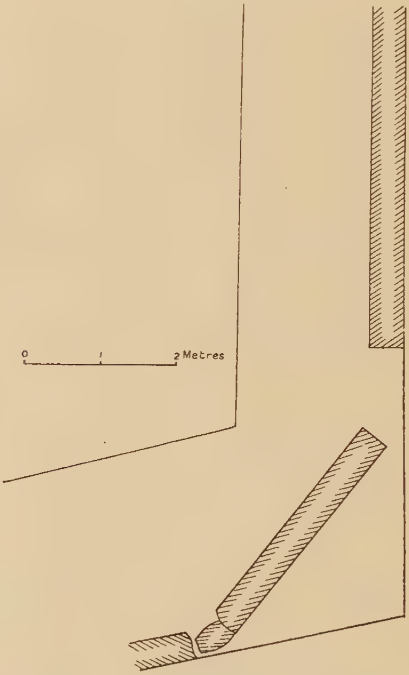

Fig. 4.—Corner of Outer Enclosure Wall.

*The great outer enclosure wall* (Pls. 27, 29 *c*, *d*) seems to have been planned at the same time as the temple and executed not long afterwards. None of the sherds found under, or immediately behind it, or in its interstices, are later than the second half of the sixth century, nor do we find late material in the lower layers of the fill behind it. This fill, full of limestone chips, looks like débris from the temple, and contains pieces of red column bases that we believe to be spoilt and rejected. It is an interesting fact that the foundations of the outer wall rest in part on an archaic deposit containing the same kind of object as the deposit at the foot of the curved wall: evidently this deposit was quite hard by the time the outer wall was built. Behind the latter, we detected a trench filled with yellow earth, dug, perhaps, to accommodate the foundations. All things considered, we decided that a date about 500 B.C. was the most probable one for this imposing piece of work.

The material of the wall and its probable source in a neighbouring quarry are discussed in Δελτ. i 74–6 (Figs. 10, 11); ii 191–2 (Fig. 4). In the former place the construction is described, especially the difference between the north-western face, where the blocks are plain, and the south-western face, where they are tooled with a border. Both types of masonry seem, however, to be contemporary, and to have been part of the same plan.

Investigating the north-western part of the wall, we were pleasantly surprised to discover a projection 20·6 m. long and 1·8 m. wide, built of small oblong, regular stones, and with a flight of steps at each end (Pl. 29*d*). These would have formed an approach to the enclosed area, and are the direct successors of the earlier steps described on p. 3. Beyond the steps, 8·7 m. to the north-east, the wall was found to turn at an obtuse angle, with the corner stones slightly curved (Pl. 29*c*). This may throw light on a curious phenomenon at the north-western corner, where, ·52 m. above the top of the foundation course, there is a long block arranged diagonally (Fig. 4) with another block at one end, curved like the one already mentioned. Both are *in situ*, and one may infer that the builders had a preference for avoiding sharp angles wherever a corner occurred.

The stretch of wall that runs in an easternly direction from the obtuse angle is only 1·6 m. wide, and part way along it there is a return, as though a gate had existed there. The lower courses, however, continue with a set-back of ·15 m., and, as all remains in this area are fragmentary, we cannot be sure of the original arrangement. Perhaps a reconstruction or extension of the enclosure accounts for these irregularities.

*Architectural fragment later than the temple.* The capital (Pl. 30*e*) finds counterparts at Sardis (*Sardis* II 70 ff.) belonging to the last quarter of the fourth century: it may be contemporary or later. Ht. ·31 m., width ·93 m. × ·51 m.; the abacus measures ·61 × ·48 m.

*Tiles.* Of the many fragments found, none seem to be as early as the temple or to present any feature of interest except the one illustrated in Fig. 5: red clay covered with a white coating and painted with a red circle.

*Tombs.* A search for tombs was made on the slopes of the hill east of the sanctuary, and fragments of amphorae were discovered, but the soil proved so shallow, and the fragments themselves were so corroded, that the work was abandoned as unprofitable.

*Early Christian church* (Pls. 27, 28, 29*e*). This primitive and irregular building lies immediately above the temple foundations, shewing that, when it was built, they were as low as they are to-day. The outside of the wall on the north and east has crumbled away. A date before the sixth century A.D. is made certain by the fact that the east wall of the early sixth century basilica is directly above the church.

*The basilica* (Pls. 27, 28). This was planned by Orlandos and is illustrated in his Βυζαντινὰ Μνημεῖα τῆς Χίου Pl. 6. It is discussed by Sotiriou in Ἐφημ. 1929, 192, as well as in Δελτ. ii, supplement, 28: he dates it to the sixth century of our era. When clearing the ground inside the basilica, we discovered the extra walls which are dotted on the plan. Their surviving tops are from ·20 to ·25 m. lower than those of the main walls. Those east of the modern church are only ·20 m. high, those west ·70 m. high. Mr. Megaw suggests that the wall running west from the north side of the apse and turning south near the point A is probably the foundation of the screen which divided the *Ierateion* from the main body of the church. This would continue south in the line of the east wall of the modern church, which appears to be built upon it, and return east to meet the south side of the apse opening. He adds that this type of enclosure in conjunction with a single apse indicates a date before the reign of Justin II (A.D. 565–78) when an alteration in ritual brought with it a more elaborate sanctuary with three apses.

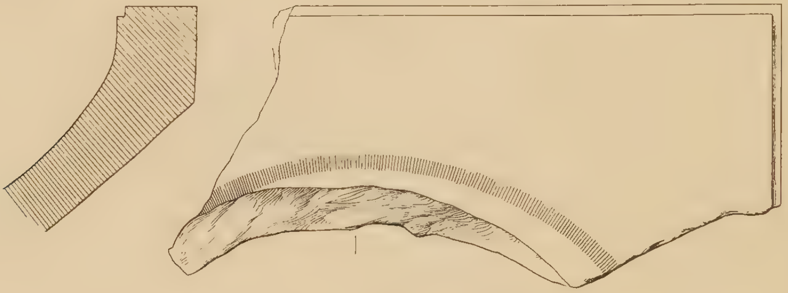

FIG. 5.—TILE. Scale ¼.

The foundations to the west of the modern church, being wider and deeper and being not quite accurately aligned to the axis of the basilica, are probably of later date. They evidently belong to a period intermediate between the destruction of the basilica and the erection of the church, which is also in part built upon them.

*Other Byzantine buildings*, mostly incomplete, cover the ground east, south and west of the basilica.[1] Their construction has disturbed the strata, often to the level of bed-rock,[2] and has eliminated all hope of finding any additional sanctuary, any altar or secular building which may have lain within the enclosures. Nor have we evidence of whether the enclosure was purely a *temenos* with Strabo's grove of palm trees to the east, or whether it was the acropolis of a small town.

## The Finds

### GOLD

Fig. 6, no. 1. Gold *crescent*, broken at one end. An ornament of gold wire is soldered on to it. Mr. Forsdyke suggests that it may have decorated a fibula-plate, the solder having disappeared. This explanation would account for the broken end, which would have been bent round the pin. The same shape is employed for a different purpose in a gold ornament from Ephesus, *Ephesus* 106 Pl. vii 6, which is pierced by a tiny ring at the top of the convex side. The gold crescent *B.M. Jewellery* Pl. lxviii 2920 is also provided with a suspension-ring.

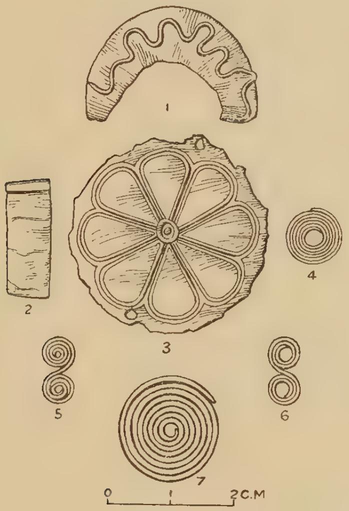

Fig. 6.—Gold Objects.

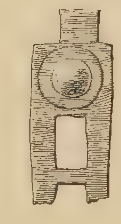

Fig. 7.—Detail of Pl. 31. No. 34. Scale $\frac{1}{1}$.

Fig. 6, no. 2 is a small piece of *gold-leaf*, nos. 4–7 are coils of gold *wire*. No. 3 is a *rosette* with two holes for attachment. It came, together with no. 5, from the M deposit, but all the other items were from the Geometric deposit at the foot of the ruined wall.

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[1] A few Byzantine graves were found close to the basilica itself.

[2] This rises steeply on the south, owing to the slope of the hill.

### SILVER AND BRONZE

*Griffin's head from cauldron, bronze* (Pl. 31, no. 38). Maximum length ·085 m. Ears, neck and boss on nose missing. Features incised. Compare the fine example acquired from a local peasant by Kourouniotis and published in Δελτ. i 76–7, Fig. 13.

Among the many griffins' heads of cast bronze which survive, there is a great variety of detail. Eyes may be solid or hollow; a spiral may or may not curl down the side of the neck; the form of the boss varies, and the degree of emphasis given to the eyebrow; incised lines may be multiplied to shew eyelashes, eyebrows and the fur on the ears. From the evidence available up to date it would seem that the spiral is not used on East Greek specimens: *e.g.* those from Chios, Ephesus, Kalymnos and (possibly) Rhodes. There are, however, many unpublished ones from Samos which may alter the situation.

The two heads from Chios might be by the same artist, but I am not sure if they come off the same bowl. Nearest in style to them but somewhat earlier is a head from Ephesus in the British Museum (Inv. 1874, 2–5, 224): another from Kalymnos, also in the British Museum (Inv. 56, 8–26, 503), is fairly close but more ornate.

The Ephesian head looks definitely seventh century, the two heads from Chios may be early sixth and the one from Kalymnos a little later. Evidence is more helpful for dating the early members of the series than the later ones, and my conclusions concerning the Chiot heads, which are halfway, are firstly based on their relations to seventh century material, secondly on the date of the majority of our finds, which is not, of course, a sound criterion.

For the manner in which such protomai were fixed to the bowls, see *Olympia* iv 115 and my *Greek and Roman Bronzes* 72 Fig. 8.

*Bronze foot, the right hind foot of a bull or cow* (Pl. 31, no. 40). Ht. ·055 m. The hair above the foot is carefully incised. Kourouniotis found a more complete hind leg, mounted on a similar square plinth and about the same size, but its detail is obscured by incrustation. Accurate dating is not possible for either fragment, but they should belong to the later part of the sixth century or to the early fifth.

*Bronze cock*[1] (Pl. 32, no. 28). Its underside is flat, and may have been fastened on to something. From the M deposit. First half sixth century.

*Bronze horn* (Pl. 33, no. 30). This is not easy to explain or to date, nor is the *flat triangular object* (Pl. 32, no. 1), in the same material. There are four small holes near one of the edges, so it was evidently fastened on to something else. One is reminded of the triangular pendant belonging to an ear-ring, *B.M. Jewellery* Pl. lii 2402. A bronze *crescent*, ·075 m. across, unpierced, was found in the archaic deposit together with a tiny bronze *double axe*, ·016 m. wide, the handle broken.

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[1] The size of this and of the remaining objects can be seen from the scales on the photographs, and it is not worth while to quote measurements.

*Miniature silver tripod* (Pl. 32, nos. 2, 5, 6). Parts of two legs survive and each has a piece of the cross-bar attached. The cross-bars are fastened to the legs by means of rivets. At the foot of no. 2 is a stud, which may have been connected with a little wheel, like those on the feet of the recently discovered tripods from Ithaka.[1] The other two fragments, nos. 5 and 6, join each other, the cross-bar being at the upper end, while there is a scarcely visible prong at the lower end also suitable for a wheel. I am indebted to Mr. Payne for identifying these pieces and explaining their function. The fragments come from the M deposit.

*Bronze handles* (Pl. 31, nos. 32, 33). One of these has three holes by means of which it could be fastened to a vase; on the central bar of the other is a larger, shallower cavity. The knobs obviously pointed upwards. Both handles come from the M deposit. Counterparts were found at Ephesus (*Ephesus* 151–2 Pl. xix 1–3), seven in number, two of which are almost exactly like ours. The members of the group are described as ‘ flattened on one side, and shewing signs of attachment to metal backing.’ Hogarth adds that ‘ four handles, at any rate, have evidently been attached to the upper rims of coffers or vases, and the metal adhering to the flat side of one specimen suggests that the backing was of iron.’

Pl. 31, no. 35 has, on the reverse of the three mouldings, square projections suggesting that it was attached in much the same way as nos. 32 and 33.

Nos. 34 and 36, on the other hand, were clamped by their feet on to the rim of whatever they once adorned. The foot of the left-hand one, with slot and cross-bar, is illustrated in Fig. 7, while the right-hand one [2] is, as shewn by the photograph, made on the same principle. The handles are finished off with bosses which look like the remains of lotus buds.

Fig. 8 shews an object which I conjecture to be a *handle* from the Geometric deposit.

*Decorated bronze rod* (Pl. 32, no. 20). Part of some vessel?

*Bronze links, part of a chain* (Pl. 32, no. 26).

*Bangles. E.g.* Pl. 31, nos. 31, 41. None are very large, some exceedingly small. This may be due to their having been made for votive purposes only, or to their having been worn by children. See *Olympia* iv 57, and, for discussion of the open and closed types, *op. cit.* 56. All are of bronze.

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[1] See above, pp. 59, 88 f., 119 f.

[2] From the M deposit.

*Finger rings.* Pl. 32, no. 24 (bronze), nos. 18 and 25 (silver). Neither the oblong nor the flattened bezel is late: compare *B.M. Finger Rings* Pl. xxvi nos. 1012, 1031 (both *c.* 500 B.C. or earlier). The two plain rings, nos. 17, 23, are probably not for the finger.

*Bronze ear-rings.* Two main types are represented, the first, common elsewhere, less so here, by Pl. 32, no. 22. It is made on the same principle as *Ephesus* Pl. xviii 3–8, but differently decorated. We have another example with bosses, and three plain ones. Of the second type, there are several variations according to the number of coils, the thickness of the wire, the decoration of the tips: the best preserved specimens are nos. 31–6 on Pl. 32. How they were worn is shewn by the gold ear-rings in Salzmann *Nécropole de Camirus* Pl. i and *B.M. Jewellery* Pl. xii 1166: they depended from another ring which pierced the ear, and the junction of ring and pendant might be shielded by a disc. Better still, we have pictures on Melian vases of the ear-rings in use,[1] and a terracotta model from Kamiros.[2] Mr. Forsdyke has pointed out that the flat ends of our nos. 31, 32 find parallels in *B.M. Jewellery* Pl. xiv 1246 and *Bull. Imp. Arch. Comm.* xxix 147, Figs. 36, 37. Our nos. 33–36 should be compared with bronze ear-rings from Ephesus, Lindos, Thera, Aegina and Olympia.[3]

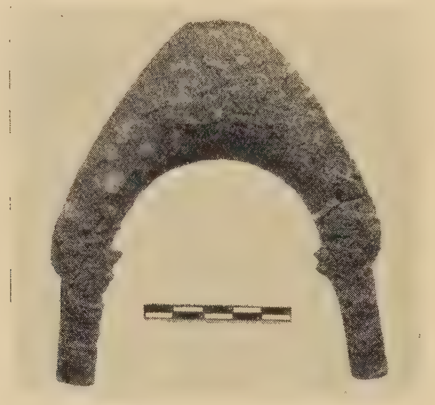

FIG. 8.—BRONZE OBJECT.

*Beads* (Pl. 32, nos. 3, 4). The smaller bead is silver, the larger one bronze.

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[1] Discussed by Hopkinson and Baker-Penoyre, *J.H.S.* xxii 53: see especially *ibid.* 52, Fig. 6. Mr. Brock has called my attention to this parallel.

[2] *B.M. Jewellery* 96, Fig. 21.

[3] *Ephesus* 148–9 Pl. xviii 34, 36, 38, 39, 41; *Lindos* 118–9 Pl. xii 271, 273–5: Hiller von Gärtringen *Thera* II 298, Fig. 488 *e, f* (these must be ear-rings in spite of the author's doubts): *Aegina* Pl. cxvi 50: *Olympia* IV 184 Pl. lxvi no. 1155.

An *ornament*, of coral bound with two silver rings, appears as no. 64 on Pl. 32. Mr. Payne informed me that there is another from Perachora.

*Bronze spirals*. *E.g.* Pl. 32, nos. 21, 27. A large number of these were found, and most of them came from the earth near the south-eastern corner of the foundations of the basilica. They are very like spirals found at Aegina (*Aegina* 417, Pls. cxv, cxvi 53): these are considered to be for twisting on the hair. But compare the curls from archaic statues found in the sanctuary of Apollo Korynthos (Δελτ. ii 94, Fig. 38, 2–5). The curls from Olympia are somewhat different (*Olympia* IV 14–15, Pl. v).

*Bronze bell-pendants*. *E.g.* Pl. 32, no. 9 (reversed), 19 (seen from above). These were a favourite form of dedication, but cannot have been conventional votive bells, for they have no clappers.

*Bronze tweezers* (Pl. 32, no. 29). The form is the same as that used in the Mycenaean period: see *Olympia* IV 68, and compare Carapanos *Dodone* Pl. li 21. Another pair was found at Kato Phana, with ends less wide in proportion to the handle.

*Bronze fish hooks* (Pl. 32, nos. 7, 8). No doubt the offering of successful fishermen. Mr. Payne told me that Perachora also produced examples.

*Bronze arrow heads* (Pl. 32, nos. 10–16). No. 15 is flat, with two barbs and slot; nos. 11, 12 have mid-rib, slot and single projection or barb; no. 13 has three ribs, slot and no barb; no. 14, three ribs, slot and single barb; nos. 10 and 16, a long tang in place of the slot. The latter is the widely distributed Cretan type, identified and discussed by Forsdyke, *Proc. Soc. Antiquaries*, xxxii 146–158. He points out its association with Cretan coins (*op. cit.* Fig. 9), and comments on the unpractical protuberance at the base of the tang, a device of which the only use would be to prevent the shaft splitting on impact.

*Bronze seal*, diam. ·047 m. (Pl. 31, no. 39). On the stamp are what appear to be two men, with a coiling object between them and something round and many-legged below their feet. Mr. Brock suggests that they may be Herakles and Iolaos with crab and hydra: certainly the coils seem to end in a head, while the man on the left gives the impression of holding a sword. The back of the seal is shaped like a low cone, and finished off with a knob which is not pierced. The context in which it was found and what remains of the design indicate a date in the Geometric period.

*Strips of bronze* are numerous, and come from various parts of the site. Their condition is such that cleaning would be difficult and destructive. Some are decorated with zigzag lines of stamped dots, some with straight lines of larger dots, some with running-S pattern interspaced with bosses. Occasionally, the edges of the strip are preserved, pierced with small holes. One, shaped like a hinge, is illustrated in Fig. 9.

*Fibulae* (Pl. 31, nos. 1–30, 37). These were, next to the vases, the most popular form of dedication, and form an entertaining series. They are well distributed over the site, but it is worthy of note that Types III and IV 9, described below, are common in the Geometric deposits; Type XII in M deposit.

Most fibulae are of bronze, but nos. 18 and 28 and one or two more fragmentary examples are of silver. For a possible gold fibula, see p. 147.

In classifying the forms, I have followed the system in Blinkenberg's *Fibules grecques et orientales*. The parallels cited there are so complete that I do not need to recapitulate them, but only to add that many come, as we should expect, from Ephesus, Lindos and Aegina. It is, therefore, all the more curious that none should have been provided by Naukratis.

The types present at Kato Phana are Blinkenberg's II, III, IV, VIII and XII, perhaps also IX in gold. Type II is sub-Mycenaean, and to it belongs, apparently, our no. 15. As nothing else from the site is equally primitive, I am inclined to think that no. 15 was actually made early in the Geometric period, though it follows an earlier fashion; it is, indeed, very like the first stages of Type IV.

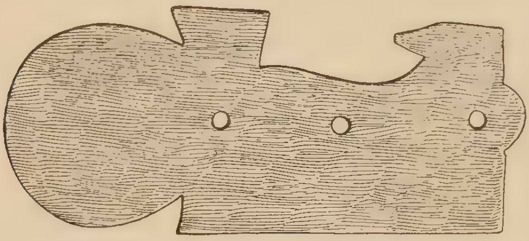

Fig. 9.—Bronze Object. Scale $\frac{1}{1}$.

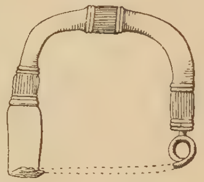

Fig. 10.—Silver Fibula. Scale $\frac{1}{1}$.

Type III is intermediate, from the typological point of view, between the sub-Mycenaean fibulae and the more developed classes: with us, as pointed out above, it is definitely associated with a Geometric context. It includes nos. 11, 16, 20, 25, 27, and the giant brooch no. 24, as well as many others.

Type IV, Blinkenberg's 'island type,' belongs to the Geometric and archaic periods. Pl. 31, no. 7 is Type IV, group 1; nos. 4 and 13 are group 6; no. 2 is group 6 or group 9; nos. 5, 9, 12, 14 are group 9; nos. 3, 22 are group 10. Many fibulae of group 9, however, and a few of group 10 are not illustrated.

Type VIII is represented once only, by Pl. 31, no. 10.

Type XII, the 'Asia Minor type,' with its numerous variations, was evidently the favourite with the visitors at the shrine. It is not always easy to assign our ill-preserved brooches to their correct groups, moreover, the groups themselves often merge into each other. Twelve brooches are reproduced: Pl. 31, nos. 1, 6, 8, 17–19, 21, 23, 26, 28–30. No. 1 has numerous small ribs on the arc; no. 18, of silver, has delicate, transverse lines on the three mouldings (Fig. 10); nos. 8, 23 and 28 have bosses above the catch-plates, but, on the reverse of no. 23, one of the bosses is triangular. No. 28 is of silver with a bronze pin (not photographed) attached by a rivet.

### BRONZE COINS [1]

Of the few coins found, still fewer can be identified. We can record the following:—

One bronze coin of Pergamon; third century B.C.; inscribed, ΑΣΚΛΗΠΙΟΥ ΣΩΤΗΡΟΣ. One bronze coin of Lycinius Lycinianus; late third century A.D.; inscribed, IOVI CONSERVATORI. Five Byzantine coins, bronze. The first is of Justin or Justinian (mint of Constantinople). The second might belong to any reign from that of Anastasius to that of Justin II (mint of Constantinople). The third, from a Byzantine grave near the basilica, is of Heraclius (mint of Kyzikos: cf. Wroth, *Cat. of Imp. Byz. Coins in the British Museum* Pl. xxv 11). The fourth is of Heraclius and family (mint of Constantinople: cf. *ibid.* Pl. xxv 2). The fifth, from the same mint, is not earlier than Heraclius.

### STONE

The only pieces of sculpture from Kato Phana are part of a gorgon's mouth and teeth, ht. ·11 m., and a lion's head, like *Ephesus* Pl. li A and B in style, but ill preserved and much smaller. Its function is uncertain. Other stone finds are few. A marble boss, with flat back, looks like the eye of an Ionic capital made as a separate piece. An objection to this theory, however, is the fact that it is pierced diagonally at the corners. A small cornelian bead, round with flattened ends, came from the Geometric deposit. A few of the scarabs are made of stone but these are published separately (pp. 163 f. below).

### BONE AND IVORY

The most attractive object from Kato Phana is undoubtedly the bone or ivory seal, Pl. 33, nos. 1–4, length ·022 m. On the back is a couchant lion, pierced for suspension between the hind and fore-paws. On the seal side is a man beside a sphinx. This seal comes from the Geometric deposit near the ruined wall, and must belong to the close of the Geometric period, about the end of the eighth century.

Two similar seals, not quite so fine, were found at Kamiros (*Ephesus* Pls. xxx 7, 11, xxxi 9, 13).[2] Both have lions on the back but different stamps on the face.

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[1] I am indebted to Mr. E. S. G. Robinson and Mr. J. Walker for identifying these coins.

[2] In the British Museum. Inv. 64. 10–7. 762 and 64. 10–7. 634.

The same Geometric deposit yielded an oblong bone bead decorated with a series of concentric circles and pierced longitudinally; also a bone disc belonging to a bronze fibula, decorated with two concentric circles between which are other circles, very small. In the archaic deposit lay a bone knob, disc, and a bone object shaped like a cone without its apex, through which was stuck a thin piece of iron which pierced it from end to end.

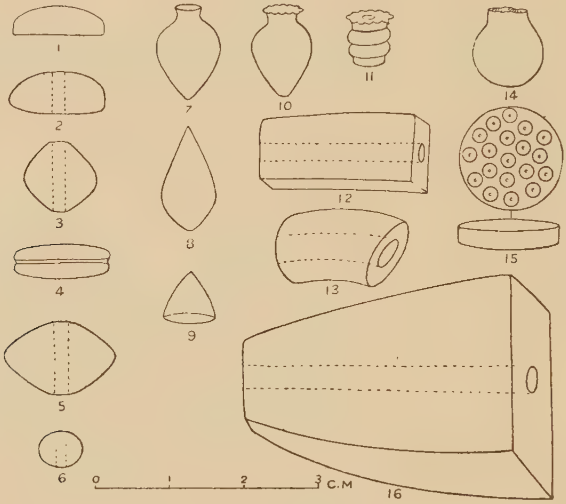

Fig. 11.—Amber.

### AMBER

Amber beads, drops and unpierced ornaments (Fig. 11) were common in the Geometric deposits, but occurred also in the rich archaic deposit (M) at the north foot of the curved enclosure wall. The beads from the latter may be survivals from the Geometric period: certainly many of the fibulae found with them are of Geometric types.

The shapes need little description, since they are illustrated. The large beads or pendants are pierced longitudinally; no. 13 is also pierced and may have looked like *Ephesus* Pl. xlviii 8; on the other hand, many of the smaller objects are not pierced and must have been mounted. All are carved, but three are more elaborate than the rest, one being decorated with engraved circles,[1] and two finished off to look like flowers.

Amber beads are found at Ephesus; see *Ephesus* 213 ff. Pls. xlvii, xlviii. Of the two colours described by Hogarth, the redder shade seems to be the one represented at Kato Phana, though the breaks shew a light

[1] This example is pierced as well as decorated.

yellow. It is not improbable that some of our smaller bits of amber were pin-heads, for Ephesus has provided us with amber-mounted pins in good preservation; also that items like our no. 14 are counterparts of the Ephesian 'vase-forms.'

### FAÏENCE

The *scarabs* (Pl. 32),[1] which need expert treatment, are published by Mr. Shorter in a separate account (pp. 163 f. below).[2] Most are of faïence, but a few are of stone. It will be seen that the majority are assigned to a period between 650 and 580 B.C. As numerous scarabs come from the archaic deposit called M, this lower limit of 580 B.C. is a most satisfactory confirmation of our own conclusions concerning the date of the early archaic wall.

There is every reason to believe that the *faïence figures* were, like the scarabs, imported from Naukratis. We know that there was a factory for such things in the Egyptian colony, and can find there parallels, more or less, for all our types. At the other sites which have so often been mentioned as producing counterparts for the objects from Kato Phana—Ephesus, Aegina, Lindos, Kamiros—some of the types are found but not the complete set.

Pl. 33, 7. Female figure. Ht. ·048 m. White paste with black markings. Against the back is a bar, pierced. We found the head of a similar figure in very poor condition with short, black hair. Compare Δελτ. i 79 Fig. 17; *Naukratis* I Pl. ii 17; *Lindos* Pl. lvi 1286, 1282, 1285; B.M. 60, 4–4, 79, from Kamiros.

Pl. 33, 8. Flute-player. Ht. ·048 m. White paste with dark brown glaze for hair. The flute is double. There is a square plinth below the feet, and a small bulge at the back of the shoulders through which a hole has been pierced. For the subject, with variations, compare *Naukratis* I Pl. ii 7 and 13 (different attitudes); *Lindos* Pl. lv 1259*a* and *b* (the latter in the same position as to our own figure); Pl. lvi 1270, 1279, 1271; *Ephesus* Pl. xliv 2; *Aegina* Pl. cxii 7. Other Aeginetan flute-players are catalogued, and examples from the Argive Heraion and Eleusis recorded, *ibid.* 387. See also B.M. 61, 10–24, 20 and 61, 10–24, 19, from Kamiros.

Pl. 33, 6. Hawk. Ht. ·053 m. White paste; traces of black glaze on legs, eyes, beak, feathers below beak and round eyes. A hole for suspension on the back has been broken off. Compare *Naukratis* I Pl. ii 9; *Ephesus* Pl. xliv 11; *Lindos* Pl. liv 1243 (several examples); lv 1244;

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[1] No. 62 on Pl. 32 is a glass bead from the upper strata. For no. 64, see p. 14. No. 61, a thin blue paste intaglio, bears a much defaced head.

[2] I am also indebted to Professor Newberry, who, on a previous occasion, had examined the reproductions of the scarabs. His conclusions agree with those published below.

Salzmann *Nécropole de Camirus* Pl. iv; also from Kamiros, B.M. 64, 10–7, 810 and 947, 60, 4–4, 86.

Pl. 33, 5. Couchant animal. Length ·039 m. White paste; traces of black glaze on neck and by hind legs on body. An undecorated plinth beneath the animal, and remains of a suspension-hole on the back. Compare *Naukratis* I Pl. ii 11.

All these figures come from the M deposit. A few pieces of round aryballoi in faïence were also found in various parts of the site.

### TERRACOTTA

Pl. 33, 12. Head of bearded male figure. Ht. ·044 m. Reddish buff clay. Nose chipped; general preservation poor, so that accurate dating is impossible. The head must, however, belong to the sixth century.

Pl. 33, 11. Head of bearded male figure. Ht. ·043 m. Buff clay; white slip; black paint shading into brown. The features are drawn in paint, and the divisions of the teeth are shewn by fine brown lines. Early sixth century.

Pl. 33, 10. Female (?) head. Ht. ·057 m. Reddish buff clay. Third quarter sixth century.

Pl. 33, 9. Part of terracotta head, cast hollow. Length ·085 m. Buff clay, grey in break; traces of white on face and of red on lips. Eye pierced. Second half sixth century. In style and technique, not unlike *Ephesus* 200 Fig. 38.

Pl. 33, 13. Part of female figure. Ht. ·11 m. Red clay. The right hand holds a dove, the left pulls the drapery to one side. Last quarter sixth century. The type is a common one on East Greek sites.

Pl. 33, 15. Part of female figure. Ht. ·12 m. Warm buff clay; white slip; red paint for waistband. Date uncertain. The technique is unusual but not unparalleled; see *Lindos* Pl. lxxxii 1877 and various specimens from Cyprus, such as A 145 in the British Museum. *Aegina* 379 Fig. 310 may belong to the same class.

Pl. 33, 14. Curl from large terracotta statue. Length ·105 m. Red clay; white slip; traces of black paint. There are actually three rows of curls, two in front, one at the side on the left. Date, probably the end of the seventh century.

The provenance of these terracottas may or may not throw light on the disposition of the sanctuary, but it should be recorded that Pl. 33, no. 13 comes from the area east of the temple, 10, 11, 14 and 15 from the archaic deposit at the north foot of the curved enclosure wall, 9 from among the red limestone chips described on p. 141, 12 from a low stratum on the west between the inner and outer enclosure walls.

*Lamps.* Two fragmentary lamps were found, one with a plain round body and a broken nozzle, the other with a pear-shaped body on which are numerous small bosses. Both have solid handles, and seem to belong to the early Christian period.

### POTTERY

*Geometric* (Pls. 34–36). Large deposits of geometric pottery were found on the south side of the site, especially between the curved enclosure wall and the ruined wall which we attribute to the geometric period.

This pottery may be divided into two classes, one with a white slip, the other without. In both classes the clay is buff or reddish-buff; the paint varies from red-brown to black, the redder shades being especially common on the white vases; often the paint on the insides of open vases is of a different colour from that outside. The really significant fact is that in open vases of the white slipped class there is almost always a slip on the interior beneath the paint, a device peculiar to later Naukratite ware.

A certain individuality of style gives us every reason to suppose that the geometric ware is, with one or two exceptions, local. Notice particularly the multiple chevrons and the maeander filled with dots, a motive which appears rarely outside Chios. It occurs on a sherd from Samos which seems to be somewhat different from its fellows,[1] and on a fragment from Aeolic Larissa.[2] The quantity of the fragments is also in favour of a local origin. No. 20 on Pl. 34, from a skyphos, might be imported, though it is not easy to identify the fabric. It may be Attic.

None of the white slipped sherds can be associated with any foreign site, and most of the non-slipped sherds use the same wide repertory of patterns as the slipped ones.

The favourite rim is straight, with a concavo-convex moulding between it and the convex body. It appears on the large fragment illustrated on Pl. 36 *e*, which is evidently part of a bowl with a pedestal-foot, a common geometric form. At Kato Phana the lower part of these bowls is rather plain, either covered with paint or with dark zones varied by horizontal bands. Jugs are also found; see Pl. 36*b* and *c*, of which the second seems to be early.

A more detailed description is, perhaps, required of the individual sherds on Pls. 34 and 35.

Unslipped wares:—Pl. 34, lower half.[3] Pl. 35, nos. 1, 3, 5, 7, 12, 14, 15, 17, 24. All are open vases except Pl. 34, no. 24.

Pl. 35, no. 2 has a buff slip.

White-slipped wares, apart from the Transitional class, for which see below:—Pl. 34, upper half. Pl. 35, nos. 4, 6, 13, 20, 21, 23, 25 (reversed),

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[1] *A.M.* liv 11, Fig. 2 no. 1. Was it imported from Chios?

[2] Istanbul, Inv. 6589. I am indebted to Mr. R. M. Cook's notes for this parallel.

[3] Except possibly no. 37.

27; also probably 9, of which the record is missing.[1] All are open vases except the foot Pl. 35, no. 27, Pl. 34, no. 5 and Pl. 35, no. 20 which is uncertain. Pl. 34, nos. 18, 19 are, of course, handles. The following have white slip on the interior beneath the dark paint: Pl. 35, nos. 4, 13, 25; Pl. 34, nos. 1, 6–9, 12, 17. Pl. 34, nos. 3, 10, 16 have merely a brown stripe on the white.

The later Geometric period is represented by the fragments with figures on Pl. 36. They are as follows:—

28. White slip; black and white paint. Men with shields on which are white spots. Interior, red-brown without slip.

29. Creamy-white slip; brown paint. Man on horseback. Interior, brown on white slip.

30. Creamy-white slip; red-brown paint. Helmeted warrior. Interior, red-brown paint on slip.

31. No slip; brown paint. Goat and star. Interior, brown.

32. No slip outside; red-brown paint. This was included in the photograph of the figures but is decorated with patterns only. Interior, white slip.

33. No slip; brown paint. Man with shield, sword and spear fighting a lion. Interior, brown.

34. Creamy-white slip; dark brown paint. Birds and horse's head. Interior, plain.

35. White slip; black paint. Lower part of figure in long dress. Interior, black without slip.

36. No slip; brown paint. Water bird. Interior, brown.

Possibly but not certainly late in the Geometric series is a peculiarly fine ware, of which good examples are Pl. 36*a* and Pl. 35, nos. 8, 10, 11, 16, 18, 19, 22. The walls are thin, the surface covered with a peculiarly smooth slip which underlies the black paint on the interior in the true Naukratite manner. The paint, moreover, has often the red-brown tone which is common on that ware. In short, the fine Geometric vases are in the typical Naukratite fabric, though different in shape and decoration. We have been tempted to call them *Transitional*, believing them to be the material out of which evolved that orientalizing ware which was first found in the Egyptian colony.

*Naukratite ware.* For classification of the material, discussion, dating and references, see E. Price *J.H.S.* xliv 180 ff. and *East Greek Pottery* 15–19. Kourouniotis publishes his finds in Δελτ. ii 193 ff., and advocates a Chiot origin for the style. The question is too complicated for complete treatment here, but I should like to emphasize certain pieces of evidence which can now be used in support of his theory.

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[1] So too the record of no. 26.

The fact that, in local Geometric white-slip vases, we often have a white slip beneath the paint on the insides of open vases suggests that an individual characteristic of Naukratite pottery goes back to the Geometric period in Chios. More significant still, the Transitional vases, whatever their exact date, provide a fabric from which Naukratite ware seems to have originated. That Naukratite ware is well distributed in the island is proved by Kourouniotis' publication as well as by the results of our own excavations: also by recent discoveries of Naukratite sherds unearthed in large quantities during recent building operations in the town of Chios and collected in the museum by Mr. Pappaiannoudes. They include some chalice-feet with a rounded, degenerate-looking rim which might be regarded as a later phase of the style.

*Naukratite A, without incision.* The new sherds from Kato Phana will now be described under the conventional headings A and B. The clay is grey, pink or reddish buff; there is a white or creamy white slip; paint, red-brown to black. No sherd has supplementary colours outside. The inside of open vases is covered with blackish paint on white slip, and sometimes adorned with bands or floral patterns in purple-red and white.

The site yielded a large quantity of fragmentary chalices of the plainer types, such as Pl. 37, no. 19. Other examples are no. 9, with the spring of the handle and horizontal tongue-pattern; nos. 10, 14, with circles surrounded by dots on the handle-zone (cf. B.M. 1924, 12–1, 521, very like ours; B.M. 1924, 12–1, 515; B.M. 86, 4–1, 1562; B.M. 1924, 12–1, 513 and others); no. 22, a particularly fine chalice with the saw pattern, a favourite Naukratite motive, repeated to fill the vertical bands.

The chalices decorated with birds and beasts are fewer. The best are no. 16, with a bird perched, perhaps, on the volute of an altar (cf. the bird walking up the steps of an altar, *C.V.A. Cambridge* ii Pl. xvii 45); no. 7 with a sphinx (cf. Δελτ. ii, Fig. 7 facing p. 192); nos. 12, 13 with lion (cf. Salzmann *Nécropole de Camirus* Pl. 38); no. 15 with foot of feline, dog or sphinx.

Small phialai occur, *e.g.* Pl. 37, nos. 4, 6, 20, 21. One, decorated with saw pattern, has an ancient rivet hole, two others have the familiar border of checks and spots, a fourth is adorned with rays.

Pl. 37, nos. 5, 8 are legs or handles. There are parallels for either form in the British Museum.

Most important is the small votive shield Pl. 37, no. 23 (interior, no. 30) with the strap, which would serve as a handle, rendered plastically. This is a new shape in Naukratite pottery, and I owe its identification to Mr. Payne. Compare the votive shields from the Heraion at Samos, discussed by Eilmann, *A.M.* lviii 118–25, Beilagen xxxvi–xxxvii.

Another new shape is the hydria. Of our two examples, one is certainly Naukratite, the other probably so. Both were found, not at Phana, but by peasants from the neighbouring village Olympou, who described the find spot as a necropolis north of the village. Our permit did not cover that district, and even if it had, excavation in the summer would be undesirable there owing to the hardness of the ground. Unfortunately, the finders had tried to clean the vases with disastrous results.

Hydria. Pl. 36*d*. Ht. ·19 m. Reddish buff clay; white slip; black and brown paint, the latter being a thinner version of the former. Top of lip, black. Three brown stripes below lip, and one at base of neck. Traces of black on the handles. There is white slip everywhere beneath the black, but it is badly preserved; the surface is both scratched and stained and we cannot reconstruct the decoration. This is the vase which has every claim to be Naukratite.

Hydria. Pl. 36*f*. Ht. ·165 m. Reddish buff clay. Traces of white slip and of black paint. A black stripe inside lip. This vase is coarser than its fellow. I think it belongs to the same class but that it is later and more degenerate.

*Naukratite B., with incision.* We did not find much of this: the best pieces are on Pl. 37. Both the animal friezes and the dancing komasts occur, but of the latter there are only one or two fragments, though Kourouniotis found more (Δελτ. ii Figs. 10, 13 facing p. 192, and Fig. 11 on p. 196). Nos. 1 and 3 are part of the same vase, a bowl (?). White slip; golden-brown to dark brown paint with faint and uncertain traces of red enhancements. Narrow bands of paint on the interior by rim, and, at the bend, zigzags between lines.

Pl. 37, no. 2. Pyxis(?). Whiteslip stained brown in places; black paint; purple-red enhancements. Interior, slipped with a band of paint.

Pl. 37, no. 11. White slip; black paint. Interior, red-brown on white slip.

*Coarse local ware.* (Pl. 37, nos. 24–9). Large quantities of thick sherds were found. They are usually covered with white slip and boldly but simply decorated in two colours, black and red. Some come from shallow bowls, some from jars narrowing towards the lip, and the shapes are supplemented by a hydria found by Mr. Pappaiannoudes near the town of Chios. Compare the pottery described in Δελτ. ii 204–6, and illustrated in Figs. 24–5. The only unslipped vases, possibly kraters, are those from which come the painted inscriptions ΦΑΝΑΙΟ (see below).

*Uncertain ware, probably local.* Pl. 37, nos. 17, 18. The knob is of pink micaceous clay with no slip; reddish black paint. The other fragment, not easy to reconstruct, is of pink clay with a micaceous white slip; matt red paint. On the exterior (not figured) is a rectilinear design (maeander ?) bordered by vertical lines.

*Inscribed sherds.* Inscriptions are painted on sherds of Naukratite A; painted and incised on sherds of coarse ware.

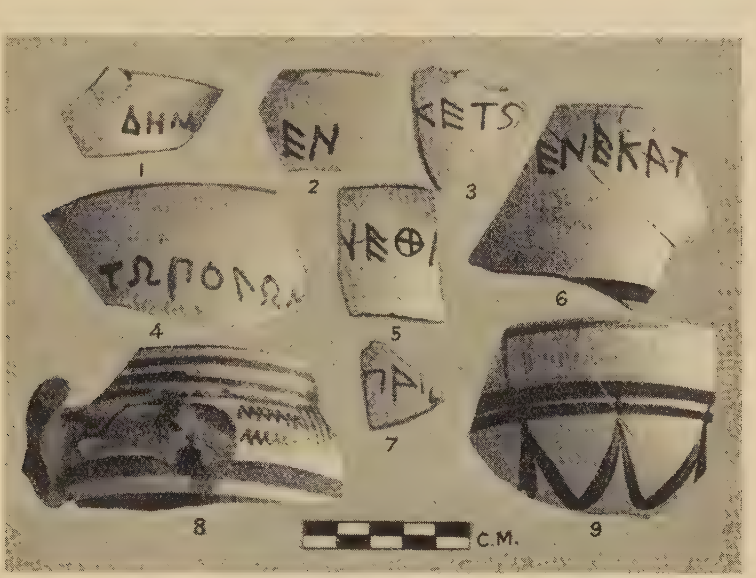

FIG. 12.—1–7, INSCRIBED SHERDS, NAUKRATITE A; 8–9, IMPORTED SHERDS.

On Naukratite A (Fig. 12) we have the following: No. 4, τω[ι α]πολ[λ]ων[ι]. No. 6, . . . ενεκατ, . . . probably ανεθηκ]εν εκατ[ηβολωι. No. 1, δημ . . . No. 7, . . . παιδ . . . (?). Nos. 2, 3, 5, bits of ανεθηκε τωι Απολλωνι. It will be remembered that Kourouniotis found dedications to Artemis (Δελτ. ii 199 Fig. 16).

On coarse ware (Fig. 13) are four inscriptions that can be reconstructed as Φαναιο, most reassuringly dedicated to Apollo Phanaios. Cf. Δελτ. ii 200 Fig. 17. The incised letters AVNC are not easy to reconstruct.

*Imported sherds of the post-Geometric periods.* (*a*). *Samian* (?). Part of a skyphos, Fig. 12, no. 8. This is, in shape and design, very like the fragments from Samos illustrated in *A.M.* liv, *Beilage* v, 2, 4, 6, discussed on p. 14. Our sherd is of buff clay, unslipped, with decoration in brown paint; the interior is brown. The Samian sherds are described as having an inferior slip and grey-brown paint.

(*b*). *Lesbian bucchero.* Seven or eight sherds, too small to shew shape or date.

(*c*). *Uncertain East Greek fabric.* Part of cup. Fig. 12, no. 9. Red clay; no slip; brown paint used thick and thin. Interior, brown, lighter near rim and decorated with red stripe.

(*d*). *Clazomenian.* Possibly a very small fragment, not illustrated, with part of a wing, from a (?) neck-amphora.

(*e*). *Aeolic* (?). Pl. 37, no. 31. Red clay; white slip; matt red paint. Interior, carelessly applied white slip. Mr. R. M. Cook suggests that this might be comparable to Aeolic material in the Louvre, *e.g.* Louvre B. 561, 1, 561, 9, and C.A. 1492.

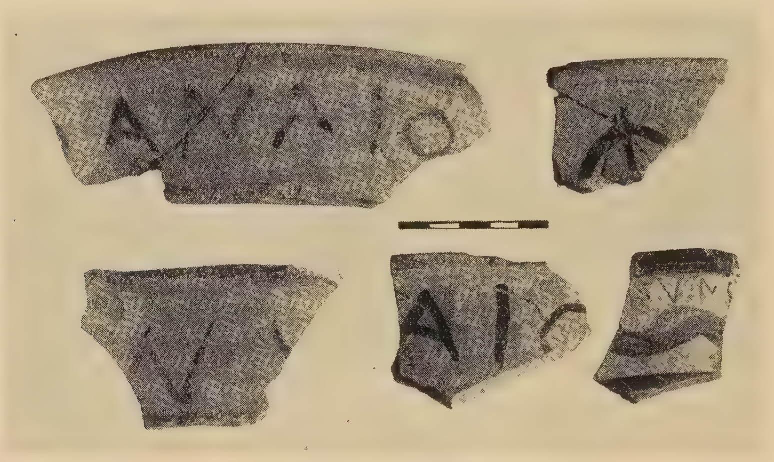

FIG. 13.—INSCRIBED SHERDS OF COARSE WARE.

(*f*). *Protocorinthian.* Surprisingly rare: contrast the quantity found at Antissa (*B.S.A.* xxxii 58, Pl. 23). The lip of an aryballos, the foot of a pear-shaped aryballos decorated with rays, and a few indefinite fragments are all we got.

(*g*). *Corinthian.* Not common. The pieces found were mostly of round aryballoi, small and ill-preserved: those from the deposit at the base of the curved enclosure wall seem to be Middle Corinthian: those from beneath the outer wall are doubtful.

There is one large fragment from a krater, Pl. 37, no. 34: the clay is micaceous and has a distinctly reddish tone which made me think at first that the vase was Clazomenian, but Mr. Payne points out the strong resemblance to a Late Corinthian neck-amphora in the British Museum,

B. 36. The surface is covered with a very thin, red slip, the paint is black supplemented by red and white. Tongue pattern in black, red and white with brown outlines. Below, men and women dancing. The left-hand man has a red patch on his hip. Inscription, . . . TVA, retrograde. The woman is white with brown outlines, the right-hand man has a red mark, perhaps accidental, on his eye, and a red stripe on his chiton, but his fillet is not red. Beyond is part of a wing, red and black. Incision is used for men and wing. Interior, black.

(*h*). *Attic.* Two fragments with palmettes, from near the handles of band-cups, one being no. 33 on Pl. 37. A fragment of a black-figure closed vase with part of a monster's tail, Pl. 37, no. 32. Some small black-glaze fragments of sixth-century vases. Three or four black-glaze fragments, which might belong to the fifth or fourth centuries, from the upper strata.

(*i*). '*Megarian*' *bowls.* A few very small fragments from outside the outer enclosure wall. Cf. Δελτ. i 76.

W. Lamb.
1935.

## The Scarabs

(By Alan W. Shorter)

The majority of the scarabs (Pl. 32), are of types familiar in the Saïte period, and a great number may be actually paralleled by examples from the scarab-factory at Naukratis, published by Prof. Sir Flinders Petrie in *Naukratis* I Pl. xxxvii. Thus it is probable that the said scarabs may have been manufactured at Naukratis, which would mean that they date from the second half of the seventh century (*i.e.* the beginning of the Twenty-sixth Dynasty) to 580 B.C., when the Naukratis scarab-factory came to an end. The earliest scarab would seem to be no. 72, which bears the prenomen of Rameses II and hence may be of the Nineteenth Dynasty. Other non-Naukratite types are some which may perhaps be Phoenician, and will be found described below. The materials of which the scarabs are made are chiefly glazed composition (this includes all the scarabs of definitely Naukratite type) and glazed steatite.[1] The following description is based on photographs and sketches only, and is confined to the more important specimens.

I am indebted to my colleague Mr. Barnett for the classification of those scarabs which may be Phoenician and Syrian.

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[1] The stone examples are nos. 65–67, 73, 74.

| Number. | Description. | Design. | Parallels in Petrie *Naukratis* I, Pl. xxxvii. |
|---|---|---|---|
| 70. | Cowroid. | Lotus plant. | No. 7. |
| 39. | Round seal. | Papyrus flower in boat with papyri-form ends. | 5 (very similar). |
| 56, 58. | Scarabs. | Walking lion and sun-disc. | Nos. 34 ff. |
| 43. | Scarab. | Couchant lion and sun-disc. | 42 ff. |
| 40. | Scarab (?). | *Shu sa Rēʿ.* | 83, 84. |
| 44. | Round seal. | 'Shu son of Rēʿ' (?). | |
| 55. | Scarab. | *Amen-Rēʿ neb.*<br>'Amen-Rēʿ the lord.' | 89 ff. |
| 52. | ,, | *Men-kheper-Rēʿ.*<br>Prenomen of either (a) Thothmes III (of the XVIIIth Dynasty), *i.e.* a late 'reissue' of the Saïte period, or (b) Piankhi (of the XXVth Dynasty). | No. 63. |
| 49. | ,, | *Pa-di-Bastet,* a personal name meaning 'gift of Bastet.' | Nos. 117, 118. |
| 38. | ,, | A royal name (?) *Rēʿ-Men-Hr* (?). | 47 ff. |
| 46. | ,, | | |
| 57. | ,, | *imakh neter neb*<br>'favoured by every god' (?). | No. 108. |
| 51. | ,, | Gorgoneion. | Almost certainly of Naucratite type. |
| 68. | Scaraboid. | Winged sphinx above winged solar disc and flying scarabaeus. | Possibly Phoenician? |
| 63. | Scaraboid. | | Possibly Syrian? See special Syrian group of scarabs published by Blinkenberg in *Lindos.* |
| 66. | ,, | | |
| 67. | ,, | | |
| 73. | ,, | | |
| 74. | ,, | | |
| 72. | Scarab. | *User-Maat-Rēʿ-setep-en-[Rēʿ].*<br>Prenomen of Rameses II, therefore of the XIXth Dynasty? | |

# PROTOATTIC POTTERY[1]

(Plates 38–60)

Protoattic vases have not been classified to anything like the same extent as the Black Figure vases which follow them, or even the Geometric which precede them. Much has been written on this fabric, in fact a complete bibliography down to the Nessos vase alone would include upwards of ninety publications, some of considerable length; but the standard work is still Boehlau's *Frühattische Vasen* in *J.d.I.* 1887, 33 ff.[2] In the forty-nine years since Boehlau wrote, a lot of new material has appeared, and there has long been need for a further, though not yet final, study of the subject.

Protoattic can now be divided into three chronological periods:

1. The first contains vases which shew strong Orientalizing influence in

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[1] I am indebted to the late Mr. M. P. Vlasto for invaluable assistance and permission to publish photographs of vases in his private collection in Athens: to Professor J. D. Beazley, my brother, Mr. R. M. Cook, and the late Mr. H. G. G. Payne, Director of the British School for assistance and information about vases and sherds with which I was not acquainted: to Mr. A. D. Trendall and Mr. T. J. Dunbabin: and to Herr P. Kahane for much help and advice, particularly in connection with the Geometric period; he must not be associated with any mistakes I may have made there.

My thanks are due to the staffs of archaeological museums and collections where I have worked, especially to Mrs. Karousou at the National Museum in Athens and Miss L. Talcott at the Agora, and Dr. T. Dohrn in Berlin; also to Dr. R. Hampe of the German Institute in Athens. Mr. Vlasto kindly allowed me to use his photographs of vases and sherds in his own collection. The numerous reproductions from other photographs in the possession of the German Institute, and of museums and individuals, are acknowledged in the footnotes.

I am indebted to the Provost and Fellows of King's College, Cambridge, and to the Trustees of the Craven and Walston Funds, for the opportunity to research. A grant was made from the Craven Fund towards the publication of this paper.

[2] Four works publishing important masses of material are Graef-Langlotz *Vasen von der Akropolis*, S. Pelekidis, Ἀνασκαφὴ Φαλήρου (Δελτ. 1916), K. Kübler *Ausgrabungen im Kerameikos* (*A.A.* 1932 to 1935) and Dorothy Burr *A Geometric House and Proto-attic Votive Deposit* (*Hesperia* ii, 4 (1933)). Throughout this article vases and fragments published in *Vasen von der Akropolis* and *A Geometric House and Proto-attic Votive Deposit* are referred to simply by their numbers in the inventory, preceded by the name Graef or Burr; similarly, museum catalogues are frequently referred to simply by the name of the author. References will be found in the footnotes of this article to other publications which have contributed to the study of Protoattic; almost all the pre-war references have been collected by Pfuhl (*Malerei und Zeichnung* i, 125).

the drawing but are still more or less Geometric in general form; this I call Early Protoattic.[1]

2. The second contains works of developed Orientalizing style and no longer Geometric form; this I call Middle Protoattic. During the greater part of the Middle Protoattic period the prevalent style was one which on account of the strong contrast of the black varnish and white paint peculiar to it I call the ' Black and White ' style; towards the end of Middle Protoattic the infant Black Figure technique, which was at first considered inferior and confined to the less ambitious pieces, began to increase in popularity.

3. In the last period, that of the Nessos painter and his associates, the Black Figure technique was universal; this period I call Late Protoattic.[2] In this paper no attempt is made to enumerate or classify the works of the Late Protoattic period, as so small a part of the surviving material has been published.[3] The attempt to classify Middle Protoattic is open to the same criticism, but the published material is more helpful. The Early Protoattic material is the smallest in actual aggregate, but it is the most fully published, and admits of division into several contemporary groups.

## The Transition from Late Geometric

The finest example of the early period is the hydria in Athens from Analatos (Pls. 38 *b*, 39).[4] The draughtsmanship is clearly no longer Geometric; the palmette ornaments on the main zone of the vase, the subtle curving lines of the lions' bodies and the backs of the deer, and above all the sensitive rhythm of the figures on the neck are all quite foreign to Geometric tradition. The shape also is not Geometric: the hydria type with one large and two small handles is rarely found there, and the amphorae which correspond to it in shape are fatter and more rounded, and the neck makes a sharp angle with the body; whereas their Protoattic successes become slim and steep, and neck and body are united in a fairly harmonious outline.

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[1] The term ' Phaleron,' frequently used loosely to cover the earlier phases of Attic Orientalizing pottery, is only serviceable if it is applied to the minor works of this period, which have been found at Phaleron in large quantities and were probably made there (cf. Burr, p. 625).

[2] This does not imply that it is wrong to call works of this period ' Early Black Figure ': the definition of Black Figure is technical, that of Protoattic chronological: as a matter of fact the black figure technique goes well back into Middle Protoattic, and on some vases occurs together with the earlier technique, but it is convenient to reserve the connotation ' Black Figure ' for the ware which succeeds Protoattic.

[3] Specimens of recent finds of this period appear in *Society of the Friends of the National Archaeological Museum of Athens* (Athens, Hestia, 1936), 10 Figs. 8–9*a*.

[4] Mus. no. 313. *J.d.I.* 1887, 34, Pl. 3. Pl. 39 from Institute Photos N.M. 3188 and 3189.

Although the Analatos hydria stands at the head of the 'classical tradition' of Protoattic it would be a mistake to deny direct continuity between it and the Geometric vases which precede it; there is a sequence of Late Geometric vases leading down to the boundary of Protoattic, from which the Analatos hydria is derived. Among these an inner group is formed by three amphorae which have on the body two zones of figures, the upper a procession of chariots, the lower soldiers in file. The earliest of the three is Athens 894;[1] the handles are already decorated with plastic serpents, but the neck is still painted with bands of maeander pattern separated by smaller bands of subsidiary ornament. The second is in Berlin;[2] the maeander pattern has been relegated to the top band on the neck, in the middle band is a procession of women, and the two lower ones have a lattice pattern and a row of thin long-legged birds: there is also in Philadelphia another amphora by the same painter with similar representations of warriors and chariots.[3] The third amphora consists of fragments in the collection of Mr. Vlasto; Orientalizing motives appear on the subsidiary ornamental bands, and a second frieze of smaller figures has been introduced on the neck below the procession of women; the drawing of the figures is more advanced but still Geometric. With these three amphorae go two kraters, a closed one in Athens from Eretria,[4] which with its fairly pure Geometric ornament must be at least as early as 894, and an open one with a high foot also in the National Museum,[5] which may be by the same hand as 894, though some Orientalizing ornament and the more advanced drawing point certainly to a rather later date; on one side of the latter vase the soldiers now turn and fight one another, on the other are naked figures in motion whose legs cross one another's, a feature also noticeable on the soldier frieze of Mr. Vlasto's amphora; another detail on this bowl which looks forward into Protoattic is skirts painted in outline and divided into panels for decoration.[6]

These vases have in common the plastic serpents which were to become an almost indispensable decoration of the lip, shoulder and handles of amphorae and hydriai of the 'classical tradition' of Early Protoattic, reserved shields with painted patterns,[7] and the use of added white paint, which is found on shield devices,[1] in spots on drapery,[2] and in dashes on the plastic serpents. The development of the soldiers is straightforward; the shield, now round, is at first big and reaches down to the knees, but becomes smaller till the whole of the thighs appears below it; thus the soldiers seem to become taller and leaner: also, at the beginning of this series the helmet crest is represented as a single thread rising out of the head, but at the end becomes an arc fastened above it.[3] The horses become suppler, particularly at the junction of neck and body, and the chariot rails, which at first were represented as separate loops at the front and back of the chariot, later join into one. The wheel becomes smaller and the charioteers larger in proportion to the size of the chariot; earlier charioteers are naked, later ones wear chitons. Mourning women, generally beating their heads, are a common motive: the prothesis is represented on the neck of Mr. Vlasto's amphora and on two others closely related to this group, the Benaki amphora [4] and one in the Agora Museum.[5] Another favourite motive is a file of naked figures in fairly rapid motion; this occurs on several of the vases already mentioned and on another amphora in Toronto,[6] which must be placed in this group; in some cases these figures have one hand raised; they seem to correspond to the mourning women. Ornaments typical of these vases are the lattice pattern, most commonly as a band and frequently with hooks above and below,[7] and the little standing birds, diamond patterns (nearly always under animals' bellies) and zigzag lines which are conscientiously inserted into every gap in the figure fields. There is a growing tendency to increase the height of the main figure zones and to lessen the number of minor decorative bands; these bands are sometimes replaced by subsidiary friezes of horses, deer or human figures; those that remain are then decorated with simple linear motives like those on the lower part of the Analatos hydria. Contemporary with the later vases of this group are several vases with representations of centaurs, the best an amphora in Copenhagen,[1] which has on the neck a man, apparently in a petasos, fighting a centaur: armed centaurs, sometimes with captured deer, now make their début, and become a regular motive in Early Protoattic.

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[1] *J.d.I.* 1899, 197 Fig. 61, Nicole *Peinture des Vases grecques*, Pl. 3, 2; details *A.Z.* 1885, 131 and 139.

[2] Inv. 3203. *A.A.* 1892, 100 no. 4.

[3] *Pennsylvania University Museum Journal* 1917, 16. It is smaller than the Berlin amphora (h. 0·435 m.); the shape is nearer to Protoattic, but from the drawing it seems to be slightly earlier, if anything. Another amphora in the same museum, of which Mrs. J. M. Dohan kindly sent me photographs and notes, is a coarse imitation of such vases, probably not from the same workshop.

[4] Ἐφημ. 1903, 13 Fig. 7.

[5] 810 *A.M.* 1892, 205, Pl. 10.

[6] Fragment not illustrated in *A.M.* 1892.

[7] Particularly the four-leaved pattern; Mr. Vlasto's amphora has a variety of devices including a whirligig of horse protomes.

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[1] The Eretria krater has shields with black centres, on one of which a bird is still visible painted in white. Cf. also the Philadelphia amphora and an amphora in the Benaki Museum, Athens (Ὁδηγὸς Μουσεῖον Μπενάκη, 100 no. 559), where the devices include horses, birds, crescents and Boeotian shields.

[2] On the neck of the Berlin amphora. It is not true either that red paint was used on this vase, as was stated by Furtwängler, or that red and white paint were used on an amphora from Phaleron (Pls. 48, 49 *a*, *b*), as stated by Kourouniotis (Ἐφημ. 1911, 249). The action of firing and the soil on the varnish has not infrequently been mistaken for the artist's design. I doubt whether red paint occurs on any Late Geometric or Early Protoattic vase: white is rare outside this group; cf. the group of vases discussed on pp. 179 f. the oinochoe *J.d.I.* 1899, 205 Fig. 71 (= Pfuhl *M.u.Z.* iii 11) on the diamond pattern on the body, the sherds *A.M.* 1892, 215 Fig. 4, Graef, Pl. 9 no. 283, Pl. 11 no. 303, amphorae in Eleusis (Mus. no. 674) and Würzburg (Langlotz 65, Pl. 8) and numerous imitation Protocorinthian kotylai (*e.g.* Πρακτ. 1911, 120 nos. 15 and 16), etc. White paint survives also on one or two insignificant Phaleron vases.

[3] An earlier example of the latter type appears on a large fragment Tübingen 1465.

[4] Cf. n. 1, above.

[5] *I. L. N.* 19 Oct. 1935, *Hesperia* v 1936, 28 Fig. 26.

[6] Robinson, Harcum and Iliffe, 274 no. 630, Pl. 101.

[7] As that on the upper neck-band of the Analatos hydria.

The three amphorae in Copenhagen, Toronto and Mr. Vlasto's collection are in shape and ornament very close to Protoattic, but the drawing on them is still that of Late Geometric. Mr. Vlasto's is perhaps the latest; it could well be called Transitional. But there is still one step between this and the Analatos hydria, the first step into Protoattic. This is represented by an amphora in Oxford (Pl. 38 *a*).[2] The shape of this vase is exaggerated, yet developed, and its ornamental handles are a feature common in Protoattic, but not found in Geometric; they help to disguise the angle at which neck and body join. But it is in the drawing of the figures that the change is clearest; the chariot procession on the body and the horses on the lower neck band are in Geometric style, the long-armed runners on the neck and the deer on the shoulder are Protoattic. A comparison with the runners and deer on the Toronto amphora shews that the Oxford men have less angular shoulders, less rigid arms, and a much freer stride with their weight well forward, and the Oxford deer have a curving neck and a fuller stride, particularly of the hind legs; but the difference is too general to be expressed by enumeration of details. It is also remarkable that each frieze on the Oxford amphora has its appropriate filling-ornament. The step from this vase to the Analatos hydria is not great: the difference between the two is one not so much of time as of quality. A new amphora by the painter of the Analatos hydria which fills this gap is mentioned on p. 172.

## EARLY PROTOATTIC

Before an examination of individual vases is made the main differences between Late Geometric and Protoattic in shape, ornament and composition must be summarized.[3] The change in the shape of amphorae and hydriae has already been pointed out: in other shapes there is a corresponding change towards slimness and the softening of angles, a process which was beginning in Late Geometric. The krater with upright lip, the big wide-necked oinochoe, the jug with spherical body and narrow neck, the kantharos, and the shallow bowl or plate with 'returning' handles do not survive into Early Protoattic; or at any rate vases of these shapes which may have overlapped into the Protoattic period are not painted in Protoattic style, nor have they the Orientalizing ornaments which had already anticipated Protoattic.[1] The tiny jug, which has become popular in Late Geometric, loses its rounded body and becomes slim and straight-walled like a miniature hydria; in Middle Protoattic it gets a tapering foot: at the same time a squatter form of the little jug survived after the end of Geometric. The cup with offset lip[2] is superseded in Late Geometric by the kotyle, a shape imitated from Protocorinthian, which till well on in Early Protoattic shews a steady development towards a straighter and more vertical wall. The high-handled mug, and the bowl-pyxis on a high fenestrated foot, here called standed bowl, lose the torus-shaped bulge on the body and grows taller and thinner; both reappear much attenuated in recent Middle Protoattic finds from the Kerameikos.[3] New forms of the krater appear: that most characteristic of Late Geometric and Early Protoattic is a high egg-shaped vessel without vertical lip and on a fenestrated foot. This shape lasts till early in Middle Protoattic; in decoration it belongs with the minor rather than with the major vase-shapes; the figure representations and Orientalizing ornaments which occur are usually confined to a panel on the shoulder: a rare example of a more ambitious egg-shaped krater is a piece in Cambridge[4] on whose shoulder is a humbler painter's attempt to compete with the masterpieces of the 'Black and White' style.

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[1] *C.V.A. Copenhagen* ii, Pl. 74, 3; detail, Johansen *Les Vases Sicyoniens*, 146 Fig. 110. For an earlier (winged) centaur see *A.M.* 1893, 113 Fig. 10.

[2] 1935. 19. From a Museum photograph. From Attica. Ht. 0·51 m.

[3] Examples of the commoner Late Geometric shapes are quoted in the Select Inventory at the end of this paper.

Orientalizing ornaments had already begun to appear in the last few years before Protoattic begins, for instance bands of hooks and hooked lattices, spirals, diamonds and palmettes; in Early Protoattic the new ornaments became regular, but they could not for some time completely supplant the Geometric ones. That most characteristic of the new style consists of palmette-fans in outline, alone or attached to a framework, and usually filled with dots. Early Protoattic is further marked by innovations in the treatment of the ornament, such as the filling of loops, circles or interradial spaces with blobs and suchlike, and the burdening of ornamental systems with additional branches; this tendency culminates in the florid style of the end of Early Protoattic, of which a good example is an amphora from tomb 18 at Phaleron;[1] here as often the effect is ruined by carelessness of drawing.

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[1] Since some of these shapes reappear in Middle Protoattic it may be that they continued through Early Protoattic, but it is clear that they were not so popular as before; knowledge of the Early Protoattic smaller vases is almost entirely dependent on the finds from Phaleron, among which there is not much variety (see Δελτ. 1916, 13 ff.).

[2] Two probably Middle Protoattic examples of this shape recently dug up in the Agora bear their owner's name (*Hesperia* v 1936, 34 Fig. 34 and *A.J.A.* 1936, 194 Fig. 10; the former shews that the shape was called ποτήριον).

[3] See *A.A.* 1933, 274 Fig. 10, 275 Fig. 11, *A.A.* 1934, 211 Fig. 9.

[4] *C.V.A. Cambridge* i, Pl. 2, 7. To be added are two newly published specimens, in the Agora (*Hesperia* v 1936, 35 Fig. 35) and Bonn (*A.A.* 1935, 411 Figs. 2–4). The latter may be Boeotian.

In composition there is a relaxation from the hitherto rigid division of the surface into decorative areas. Boehlau rightly remarked that symmetry and responsion lose their hold on the composition; and this growing relaxation of Geometric discipline is reflected in the new variety of technique and figure-drawing. Few writers on Protoattic have failed to call attention to the ' fermentation ' which follows the collapse of Geometric. To stress this is unfair; Protoattic progresses in general steadily and soberly. Any Orientalizing archaic fabric can be made to look intoxicated by an assortment of exotic specimens; there is new wine in all. One innovation is the use of incision, which is not very common in Early Protoattic, but becomes so later. It was a reasonable assumption from the use of it on a fragmentary amphora from the Acropolis[2] that incision in Protoattic was a technique borrowed from outside; for the incised lines on this vase are unintelligently used to duplicate the outlines of the figures. But that Early Protoattic vase-painters knew how to put incision to a better use is shewn by two recently discovered vases which are mentioned later on.[3] The most steady feature in the development of technique is reservation; Geometric figures and filling-ornament were, with certain fixed exceptions, painted in silhouette, but in Protoattic the practice of reserving the filling-ornament and other parts of the figures gives a quite different look to the vase, and it is this that made possible the drawing of interior detail; there is in particular a clear and well-defined evolution in the reservation and drawing of the face and neck of human beings and animals.

The subordination of the decoration of Protoattic vases to one or two main figure-scenes[4] is a sign that the painters were concentrating on what Buschor called the ' erzählende Stil.' There is, it is true, in Early Protoattic no great advance in narrative scenes,[5] except those featuring the hunting exploits of centaurs and lions: but there is a germ of new vigour and co-ordinated action and an appreciation of composition rather than mere juxtaposition of figures, which finds fuller expression in the ' Black and White ' style. There is an increased affection for animals, particularly lions, sphinxes, centaurs, dogs and cocks. Chariot processions and choirs of men and women, now carrying branches, continue to be favourite motives.[1] In the drawing of the figures the old ' tectonic ' forms have been replaced by a new ' organic ' calligraphy: figures that in Geometric were built up of separable parts are now inseparably united by coherent outline (contrast Geometric and Analatan man, and their horses and their wives). The curving of lines that were formerly straight extends to smaller details, such as animals' claws and the markings on manes, wings, etc.; and the necks and legs of animals and birds have often a crick in the middle. Another Geometric stylization, the multiplication of forms by repetition of the outlines, is repudiated by Protoattic painters; consequently chariots are nearly always represented as drawn by a single horse until the advance in the use of incision and white paint makes it easy for the painter to shew the second horse distinctly; and the legs of animals in motion are opened in a wide stride [2] (except for dogs and hares, which are represented running, not striding, and therefore have only two legs shewn): as a result of this refusal to repeat outlines Early Protoattic riders and standing birds have usually only a single leg. Finally there is an advance in the details of the figures, which gives Protoattic painters an advantage over Geometric.

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[1] Δελτ. 1916, 29 Figs. 15 and 16.

[2] Graef, Pls. 11 and 12 no. 345, a fragment Pl. 54 *e*. See Johansen, 110.

[3] Pp. 173, 177. Incision was used in Geometric, but only on ornament (see Burr, p. 564, Πρακτ. 1911, 126). I know of one published example on a figure in Geometric, on the eye of the steersman on the sherd *A.M.* 1892, 298 Fig. 6.

[4] This process, alien to Geometric where figure-panels are part of the decorative design, is developed throughout Protoattic. It is retarded, under Corinthian influence, in the period from the Gorgon painter to the C painter.

[5] Boehlau calls them ' situationlos.' Actually, there are in some Geometric figure-scenes representations of action which are livelier than any that appear in Early Protoattic (*e.g.* Pottier *Vases Antiques du Louvre*, Pl. 20 A 519, *C.V.A. Copenhagen* ii, Pl. 74, *Metropolitan Museum Bulletin* 1934, 170 Figs. 1 and 2); but in the generation which precedes Protoattic the figure-scenes were much more sober.

But though Protoattic was born, Geometric was not yet dead. Minor vases, particularly standed bowls, continued to be made and painted in Geometric style until at least the time of the hydria Pl. 45 (see p. 203): occasionally they borrowed motives from Protoattic to fill their panels. Conversely, Geometric ornaments and figures are found on Protoattic vases; isolated examples occur even on fine Middle Protoattic vases, generally in places where they are insignificant, on lid-knobs and as patterns on shields and on elaborate drapery. In addition there are works of Early Protoattic whose figure-drawing, through archaism and incompetence, looks very like Geometric.

## VASES OF THE CLASSICAL TRADITION

*A. The Analatos painter.* The earliest work of this painter is an amphora which has just come to the Ashmolean Museum; [3] here the Analatan rhythm is in the making.

From the Analatos hydria (p. 166) onwards the ' classical tradition ' of Early Protoattic proceeds smoothly for some distance. First comes a fragmentary standed bowl in Eleusis (Pl. 40 *a*) [4] which is in composition

[1] In Geometric, branches were generally held only by the mourners immediately adjoining the bier (see Zschietzschmann *A.M.* 1928, 20).

[2] Also for stationary figures (*e.g.* the horses *J.H.S.* 1912, Pls. 11–12). In Late Protoattic length of stride is an indication of speed.

[3] 1936. 599.

[4] Museum no. 1089. 'Εφημ. 1912, 5.

still Geometric: the drawing of the deer on the torus-band shews that it is by the same hand as the Analatos hydria, and the sphinx in the panel above makes it appear to be later. It is interesting as evidence that the Analatos painter did not entirely repudiate his Geometric upbringing.

A fragmentary plaque found at Sunium (Pl. 40 *b*),[1] representing a manned warship, shews the development in the representation of the human face; the helmeted marines have faces painted black, which are almost replicas of the faces of the women on the Analatos hydria, but the helmsman's bare head, painted in outline, is far more advanced in type and almost identical with the heads of the charioteers on a bell-krater in Munich.

This krater (Pl. 41) [2] is clearly in direct descent from the Analatos hydria. There is a close correspondence in the filling-ornament and details of draughtsmanship; the slight bend of the forelegs of the deer and the rounding of the chests of the lions on the Analatos hydria are reproduced on the horses of the bell-krater: but the complete transformation of the bodies of the lions shews that the krater is a good deal later than the Analatos vase, and quite a bit later than the Eleusis sherd, whose sphinx, though resembling them in general form, lacks their solidity.

This concatenation may seem somewhat precarious, but it is confirmed by another vase, an amphora recently acquired by the Louvre.[3] This piece is certainly the most spectacular of the group; it is extremely tall (0·81 m.), and the plastic serpents on lip, shoulder and handles are trebled. The decorative bands shew that it is nearer in date to the Munich krater than to the Analatos hydria; to judge by the drawing of the figures it is a little earlier than the krater; the filling-ornament and the chariot procession on the body argue that this interval is small. The sphinxes on the upper neck-band are intermediate between the Eleusis sphinx and the Munich lions, and the men on the lower neck-band still have the bodily form of Analatan man, though their womenfolk have become much more buxom; [4] their faces are very close to the faces of the Munich charioteers, but on the Paris vase there is no attempt to allow for the ear in the reservation of the head.[5] The order of these four vases is therefore Analatos, Eleusis, Paris, Munich. They and the plaque are the work of one painter, whom I call the Analatos painter.

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[1] From Inst. Phot. N.M. 3588. 'Εφημ. 1917, 209.

[2] Munich 1351. *J.d.I.* 1907, 78, Schaal *Bilderhefte* iii nos. 4 and 5, Pfuhl *M.u.Z.* iii 84. Pl. 41 is from a photograph kindly sent me by Prof. C. Weickert.

[3] *Bulletin des Musées de France* March 1936, 34.

[4] Cf. the projecting chest with the steersman's on the Sunium plaque. The treatment of the kolpos of the chiton at the waist is unique in Early Protoattic.

[5] The incision shews that the two nearer legs of each horse are drawn on the outside, as frequently in Cycladic and East Greek, but rarely in Middle and Late Protoattic and the vase-painting of Corinth.

The band of horizontal spirals and the lions with a single leaf under their feet point on to another vase in the same tradition, the krater from Thebes in the National Museum (Pl. 42 *b*).[1] Here the ornament is more advanced; zigzags and palmette systems remain as the prevailing filling-ornament, but the new ornament of a ‘ running dog ’ in an enveloping zigzag outline and the lowest band, consisting of rays with four small diamonds in each interval, point forward into Middle Protoattic, and on the side of the vase not here illustrated the rosettes and palmettes are no longer filled with dots but ‘ stuffed,’ each leaf containing a black core.[2] The lions are intermediate between the Munich ones and those of early Middle Protoattic. They have pointed teeth, oval eyes and a dynamic stride of the hind quarters, and are more rectilinear than their predecessors, as is shewn by their trunks and oblong faces with straight interior marking of the muzzle: there is nevertheless a strong family likeness between the Thebes and Munich lions, greater really than that between the Munich and Analatos lions. On the other side of the Thebes krater are centaurs hunting deer; the rectangular figures and the advance in details look forward to Middle Protoattic, but the form of the human bodies, the protruding eye, the bipartite equine tail and the faces of the deer point back in the direction of the Analatos hydria. This vase looks coarser in style than the preceding ones, but this is partly due to the bad preservation of the surface. Hitherto the progress of the Analatos painter's style has been marked by an increase in vigour and robustness at the expense of delicacy of draughtsmanship; the Thebes krater, the last big vase of Early Protoattic, continues the process. Whether it is a work of the Analatos painter is doubtful, but at any rate it is in the same tradition.

A link between the Munich and Thebes kraters is a lid in the British Museum (Pl. 42 *a*) [3]: its decorative bands and filling-ornament belong with the four certified works of the Analatos painter, and the row of little birds on the outer band and a larger crick-necked bird in the field are closely paralleled on the Analatos hydria itself; in the field are a Geometric colt and four grazing horses similar to the Paris and Munich horses; from their rectangular form and the falling strands of hair on the neck, a characteristic of Middle Protoattic, they are to be dated a little later than the Munich krater. This piece may be a work of the Analatos painter: if so, there is strong argument for attributing to him the Thebes krater also.

Fragments to be attributed to the Analatos painter include a sherd in

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[1] Athens 238. *J.d.I.* 1887, 39, Pl. 4. P. C. Sestieri *Rendiconti dei Lincei* 1935, 428 gives photographs of this vase taken from six different points.

[2] Hairpin-shaped ornaments with a hatched core occur frequently in Geometric; the black core appears first on the rosettes on the middle neck-band of the Paris amphora (p. 173).

[3] From a photograph by Dr. E. Kunze.

Eleusis Museum (Fig. 1),[1] perhaps also one in the Agora,[2] while there is a third in Aegina[3] with bands of hooks and little birds, which is at any rate from the same workshop. To his workshop also belong some pieces without figure decoration: a very thin amphora in the Louvre[4] with fields of vegetable ornament, and a dumpy amphora in Copenhagen[5] decorated only with varnish. In addition there are two or three unnumbered sherds from similar vases in Eleusis and Aegina.

Finally, a piece hardly by the same painter, but in fairly close imitation of him, is a fragmentary krater in Karlsruhe.[6] The horse in the central panel is clearly borrowed from him; the hind-quarters, mane and head might almost be copied from the Munich krater, and the tail and the bird under the legs from the London lid: but the coherent structure is lacking, and the casual filling-ornament and quasi-geometric division of the bands into panels argue for a less progressive workshop. At the same time this

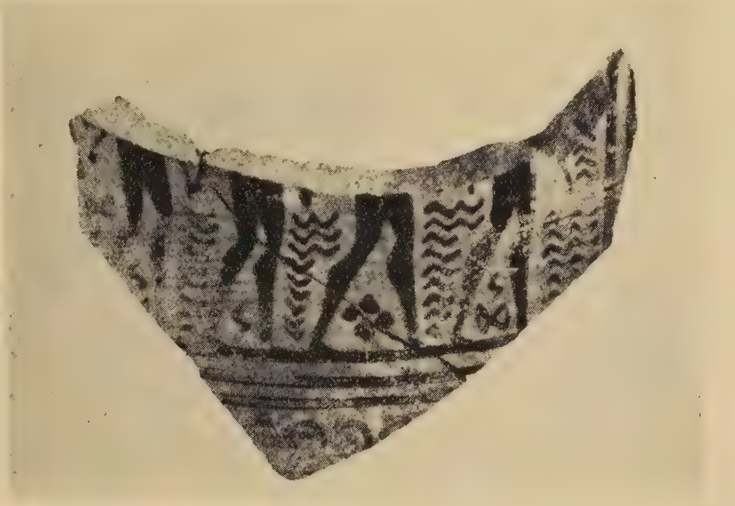

Fig. 1.—Fragment in Eleusis.
Scale, just over actual size.

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[1] Museum no. 841. From the lower part of the neck of an amphora or hydria. The figures are too small (2 cm. from the groin to the soles of the feet) to come from a main neck-frieze.

[2] Burr 162.

[3] Fr 29.

[4] CA 1960. Johansen, 117 Fig. 61, Pottier *Le Dessin chez les Grecs*, Pl. 9, 4.

[5] Museum no. 8988.

[6] *J.d.I.* 1907, 99 Fig. 12. The reconstruction Welter *Bausteine zur Archäologie*, Pl. 1 is misleading: owing to bad preservation it is in fact impossible to tell how much of the rider's face was reserved; he was represented carrying a square shield which hides his body.

fragmentary krater must be one of the latest works of Early Protoattic: in the central panel the sharp back knee-joints of the horse and the reserved rosette beside the rider's head, in a panel to the left (of which the lower half only survives) the wide, long-legged stride of the soldier, and the palmette-fan crowned by a diminutive replica of itself, and on the lower part of the vase the advanced bird type and the alternately light and dark rays with four diamonds between, all point forward to Middle Protoattic.

*B. The Mesogeia painter.* The personality of the Analatos painter has become fairly clear. His work seems to have spread over a considerable period, but not to have improved with time. A similar decline in quality is a feature of another series of vases, which consists of four hydriae, one in Berlin [1] and three in the collection of Mr. Vlasto. There is a remarkable similarity between these four hydriae in shape, size [2] and colour of clay and varnish, and in the composition and minor bands, handles and decoration of the panels in which the side handles are set. The Berlin hydria (Pl. 43) is of rather better draughtsmanship than the other three; the more rigid profile looks as though it were earlier. This hydria has on the back two lions, which are in design close to the lions on the Analatos vase: on the front are two sphinxes rather more advanced in form; the more skilfully drawn profile and the reservation of the eyes and cheeks of these sphinxes shew that the painter took much more trouble over them than over the eyeless, nutcracker-jawed man and women on the neck. A lost fragment of a krater [3] (Fig. 2) had a row of sphinxes similar to the Berlin

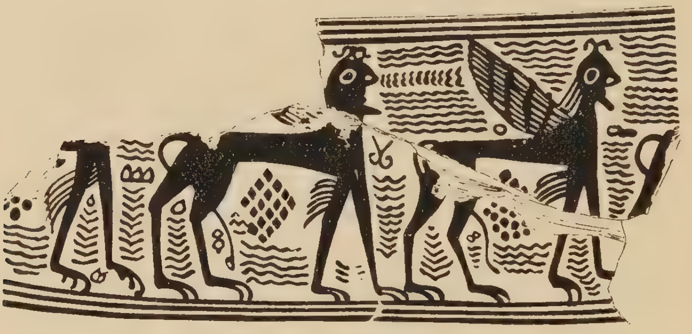

Fig. 2.—Fragment Formerly in Athens.

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[1] Inv. 31312. Neugebauer, Pl. 7.

[2] The Berlin hydria is 0·41 m. high; the other three vary between 0·43–0·44 m.

[3] From *A.M.* 1895, Pl. 3, 1.

ones; their bodies are similar to but even more backward than those of the Berlin lions. This piece was probably painted by the same hand as the Berlin hydria.

The three hydriae in Mr. Vlasto's collection are the work of one painter; they are here numbered 1 (Pl. 44), 2 (Pls. 45, 46 *a*) and 3 (Pl. 46 *b*, *c*).[1] As no. 3 was found at Spata and the other two (not together) at Kalyvia Kouvara, Mr. Vlasto has appositely christened his painter the Mesogeia painter: this of course does not mean that he was actually a provincial painter, for the Berlin hydria and the lost sherd were both found in Athens and the workshop must be located there. The chronological sequence of Mr. Vlasto's hydriae is, I think, certain. No. 3 is considerably the latest; the drawing is much more developed, the subsidiary bands have not received the same attention as before, and the body bulges nastily towards the foot. The interval separating the other two is not so great. No. 2 is slightly less Geometric in shape than no. 1, the form of the sphinx is a little more advanced, and the faces are more developed; also, incision is used on the bird under the handle. These three hydriae are presumably products of the same workshop as the Berlin hydria. It is unlikely that they are inferior products of the Analatos workshop, because they have a uniformity of their own:[2] but they clearly imitate the more expensive products of that workshop in form and drawing. In attempting to date them by a comparison with the works of the Analatos painter one must bear in mind that they are imitative and therefore not likely to be independently progressive. No. 3 cannot from the development of the sphinxes' faces and necks be earlier than the Paris amphora, and the treatment of the heads and manes of the lions[1] points to a date at least as late as the Munich krater. No. 1 looks more primitive in its figure-drawing than the Analatos hydria, but the reservation of the sphinxes' cheeks and the palmette frieze, which has relegated to the back a file of three Geometric horses, argue that it cannot be appreciably earlier; no. 2 is nearer in date to this than to no. 3, and should therefore be more or less contemporary with the Eleusis sphinx fragment. The Berlin hydria looks slightly earlier than the Analatos hydria, and the fragment Fig. 2 might be as early as the Oxford amphora.

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[1] Description: 1, *neck* four sphinxes *r.*, *body* floral system, three horses *r.*, *under side-handles* hook; 2, *neck* eight women *r.*, *shoulder* eight and a half deer *l.*, *body* two sphinxes *r.*, two centaurs *r.*, *under side-handles* bird; 3, *neck* three sphinxes *r.*, *body* two lions *r.*, *under side-handles* linear ornament.

[2] Sphinxes occur on all these hydriae, and have one curious feature in common, the representation of the wing above and below the body. This stylization was occasionally used for the wings of standing birds in Attic Geometric (*e.g.* a mug on loan in Manchester, here Fig. 3), Linear Cycladic (Dragendorff *Thera* ii, 204 Fig. 411*b*) and Cretan Orientalizing (see Payne *B.S.A.* xxix, 290, Mr. Hartley *B.S.A.* xxxi, 102, Fig. 30, and *Annuario* x–xii, 111 Fig. 89): in accordance with this usage the Berlin hydria and an amphora in Würzburg (Langlotz 79, see p. 179) shew a clearly indicated wing above and below the body; but on the hydriae of the Mesogeia painter the lower wing is obsolescent. A later Protocorinthian example is the winged lion on a shield on the Macmillan aryballos, Payne *Necrocorinthia* Pl. 1, 7, where the front and back halves of the animal are represented in different planes. On the fragment Fig. 2 there is an excrescence springing from the fork of the front legs, which from the drawing looks as though it were thought of rather as a tuft of hair than as a wing. It is not inconceivable that these representations arise from a misunderstanding of the apron between the forelegs of Egyptian sphinxes, which is imitated on metalwork imported to Greek lands at this period. Kunze (*Kretische Bronzereliefs*, 250) has drawn attention to a class of Cycladic vases (*e.g. Délos* xvii, Pl. 5, 7*a* and 8*a*) in which sphinxes are represented with palmettes hanging between their forelegs.

The works so far discussed have been placed in either the workshop of the Analatos painter or in another more or less dependent on it; there are two further pieces which seem to belong to the same tradition, but not to fit readily into either workshop. One is an unlovely hydria in Würzburg:[2] here the body bulges near the foot and the tension of Geometric has disappeared; the female figures with their bird-like feet and penguin faces look Geometric at first sight, but their chests are represented in side view[3] and the woman on the extreme left next to the handle has a far more advanced profile than the others; so the vase cannot be very early. The

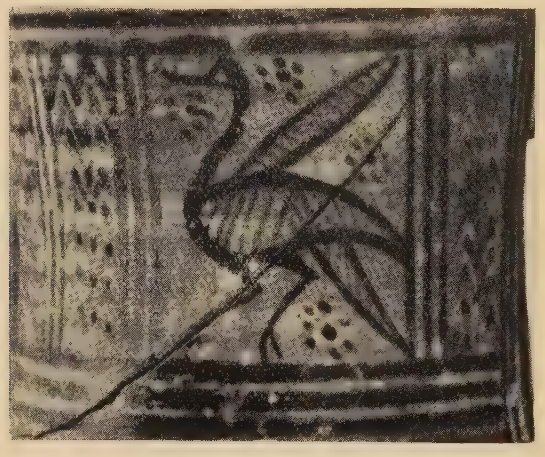

Fig. 3.—Geometric Mug in Manchester (Detail).

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[1] For the pattern on the mane cf. the wing of a sphinx on the krater-fragment *A.M.* 1907, Pl. 25.

[2] Langlotz 80, Pl. 7.

[3] Unusual in Early Protoattic, except for figures in certain positions (*e.g.* charioteers and flautists) where both arms are held in front of the body.

other is an amphora in Berlin,[1] the decoration of which is more advanced than that of any of the amphorae or hydriae so far described: the only figure-panels are on the neck; one, poorly preserved, contains a soldier on horseback, the other, in which appears a centaur holding a captive deer, is remarkable for its finely balanced composition and the conscious archaism of the drawing.

### VASES OUTSIDE THE 'CLASSICAL TRADITION'

The vases so far discussed appear to belong to a progressive and ambitious tradition, which began some way back in Late Geometric and in the course of Early Protoattic practically drove out all competition in the manufacture of large vases. The vases which remain to be discussed could not so easily discard their Geometric heritage; they put the new wine sparingly into the old bottles.

*A. The 'Würzburg' Group.* One group stands distinct from the rest, being partly influenced by the 'classical tradition.' It consists of three amphorae, one in Würzburg,[2] from which I name the group, one in New York (Pl. 47)[3] and one whose whereabouts are unknown to me.[4] These three amphorae have in common a thin, upright body, plastic serpents, bands of varnish enhanced with decoration in white paint, and bands of subsidiary ornament similar to that of the amphorae of the 'classical tradition.' But the figure-panels on the neck and shoulder in this group of vases are different from those of the 'classical tradition': they are thought of not as friezes for narrative scenes but as panels, particularly for one single figure or two heraldically grouped; the most striking example is the shoulder of the New York amphora (Pl. 47) where two lions are grouped inwards with their heads turned back. Further, the panels are set into the decoration of the vase in the same way as the ornamental panels of Late Geometric bowl-pyxides and standed bowls, and the front and back of the vase are more or less identical. The filling-ornament lies midway between that of the 'classical tradition' and that of the remaining Early Protoattic vases discussed below.

In order to fix the date of this group the figure-drawing on each piece must be examined. The goats on the shoulder of the Würzburg amphora would pass for Geometric, but their unusually stylistic pose can well be archaistic. The winged horses are better articulated than Late Geometric horses, and their hind legs are no longer bound together. The two-legged dogs, eyeless though they are, are definitely Protoattic. The unpublished vase has no shoulder-panels; its neck-panels appear to be almost identical with those of the Würzburg amphora, and it also has a frieze of two-legged dogs, similar in form, but with open mouths and with the eye and a strip on the neck reserved. These two amphorae are definitely Protoattic: but certain details, the metopic composition, the filling-ornament of cross-hatched rays and especially that to the right of the horses on the Würzburg amphora, which appears also on the neck of the New York amphora, the buttocks of the dogs on the unpublished amphora, which stick up high into the air, and the oddly shaped longitudinally marked wing of one of the horses on the Würzburg vase argue a connection between these two amphorae and minor works of Late Geometric which overlap into the Protoattic period.[1] These two amphorae are certainly from the same hand. The New York amphora looks at first sight more Geometric than the other two. The women on the neck in particular belong to the old style; but there are signs of lateness in the advanced drawing of details, the marking of both lips, the hair falling under the armpit, the clearly articulated fingers, the train added at the bottom of the skirt and the arched insteps. The filling-ornament, the form of the horses, especially the ridden one, and the close correspondence between the lions on this piece and the dogs on the unpublished amphora suggest that this vase is from the same hand as the other two. It is probably slightly earlier than they: all must be dated in the early years of Early Protoattic. This group shews a very high degree of stylization; it also shews closer affinities with Cycladic vase-painting than are found elsewhere in Attic Orientalizing.[2]

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[1] Inv. 31006. *Die Antike* 1932, 170 Fig. 2, Rostowzew *History of the Ancient World*, Pl. 57, 3.

[2] Langlotz 79, Pl. 7.

[3] 10. 210. 8. From a Museum photograph. *Metropolitan Museum Bulletin* Feb. 1911, 33 Fig. 7.

[4] I am indebted to Mr. Vlasto and Prof. Beazley for my knowledge of this vase. Prof. Beazley has allowed me to describe a photograph made while it was in the dealer's hands. It appears to have been much restored. Mr. R. M. Cook informs me that he believes this vase to be Ny Carlsberg 2761.

*B. Other Vases.* At present it hardly seems possible to make a subdivision of the remaining Early Protoattic vases outside the ‘classical tradition.’ This remainder consists of an ill-assorted mass of large and small vases. The large vases are mostly amphorae. These have not the slim shape associated with the Analatos painter and his workshop, but usually have a rounded body with a narrow foot and a wide neck which makes a sharp angle with the body; in shape they are connected with the numerous plain burial amphorae with simple geometrical patterns in a reserved panel on the neck, which have been found at Eleusis, Phaleron and many other places. Plastic serpents sometimes occur, but not so regularly as on vases of the ‘classical tradition.’ There is a paucity of subsidiary bands of decoration; when they appear they have only poor

[1] Cf. *Metr. Mus. Bull.* 1911, 35 Figs. 8 and 9.

[2] Cf. especially *Délos* xv, Pl. 20 and ff.

Geometric patterns, and they tend to be replaced on the lower part of the body by simple painted lines. The filling-ornament is poor and inconsequently strewn over the field; there is a noticeable preference for tall hatched triangles with their base on the ground line, already familiar from the Würzburg group. The drawing of human figures and animals is in the main unprogressive. It is hard to decide whether some of the earlier examples are Protoattic or Geometric; later on the influence of the figure style of the Analatos painter and his circle began to tell. There are however two domestic creatures, alien to the 'classical tradition,' in the representation of which the painters of these vases specialized. These are the dog and the cock.

The dog is often painted on less ambitious works of Late Geometric and Early Protoattic, and its pedigree is reasonably clear. The following sequence of vases illustrates it: Late Geometric amphorae Athens 897 (Fig. 4), Cleveland,[1] and Oxford (Fig. 5),[2] the Würzburg amphora just mentioned and the unpublished one by the same hand, a kotyle in Eleusis (Fig. 6),[3] a mug on loan in Manchester (Fig. 7),[4] a little jug in the British Museum [5] and another in Munich.[6] The body of the dog has at first a straight upper and rounded lower outline, but this becomes reversed in Protoattic; the Cleveland and Oxford amphorae shew the transition. The earliest dogs of this series run on four legs, but on the Oxford amphora they have become two-legged; the hind legs of the Würzburg painter's dogs are exaggerated, but are paralleled on a Middle Protoattic kantharos fragment in the Agora: [7] in developed Early Protoattic dogs walk on four legs, but in Middle Protoattic they are shewn running again. The first four examples have small pointed heads with a projecting ear and no eye; in Early Protoattic it becomes usual to reserve parts of the face and neck, the mouth is frequently open, and a collar is worn: [8] towards Middle Protoattic the mouth closes again. The cock frequently appears on minor works of this period, sometimes in company with the dog; its development consists in its gradual differentiation from other birds by special marking of the spur and claws, comb, wattle and separate hanging tail-feathers. Though it appears on Late

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[1] *Bulletin of the Cleveland Museum of Art* June 1927, 99: almost certainly by the painter of Athens 897, but distinctly later.

[2] 1935. 18. *Ashmolean Museum Annual Report* 1935, Pl. 1. From a Museum photograph. By the same hand an amphora recently acquired by the British Museum, *B.M.Q.* xi, 56, Pls. xviii, xix*a*.

[3] Museum no. 882. From a photograph which Herr P. Kahane has allowed me to use.

[4] From a photograph by R. M. Cook.

[5] *J.d.I.* 1887, 48 Fig. 8.

[6] J. 221. *J.d.I.* 1907, 100 Figs. 13 and 14.

[7] Burr 331.

[8] Protoattic collars closely resemble those worn by Egyptian dogs and cats. For sixth century collars cf. *B.S.A.* xxxiv, 62.

Geometric works which overlap into the Early Protoattic period, I know of no definitely recognizable pre-Protoattic cock. These minor pieces on which dogs and cocks are so common rarely have much artistic merit. Very occasionally they were influenced by better works, and it is noticeable that the two little jugs mentioned (in Munich and the British Museum) have filling-ornament imitating that of the 'classical tradition.'

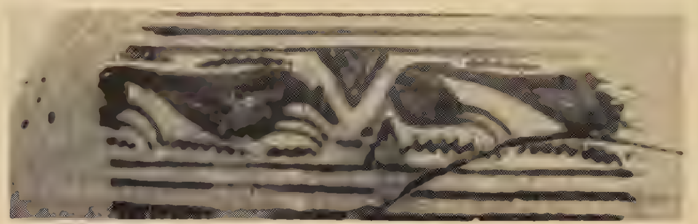

Fig. 4.—Geometric Amphora in Athens (Detail).

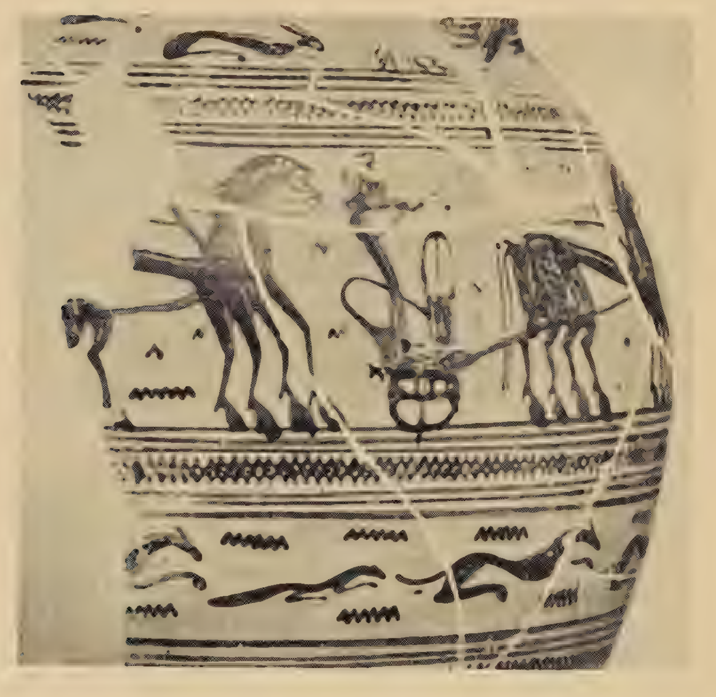

Fig. 5.—Geometric Amphora in Oxford (Detail).

Still Geometric is a kantharos in the collection of Mr. Vlasto, on both sides of which appears a lean lion chasing a matchstick deer, a work of affectation though hardly of caricature[1] (Fig. 8). Just not Protoattic, though perhaps no earlier than the Protoattic amphora in Oxford, is an amphora in Boston,[2] on which the figure scenes are slightly influenced by the ' classical

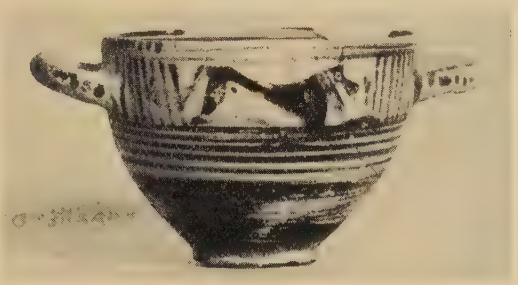

FIG. 6.—KOTYLE IN ELEUSIS.

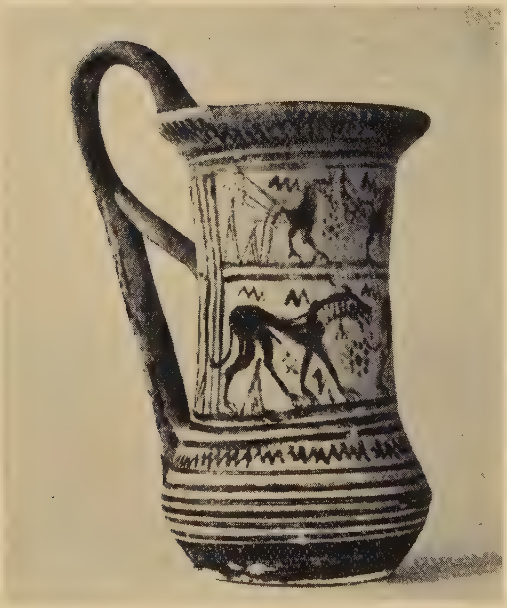

FIG. 7.—MUG IN MANCHESTER.

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[1] It is doubtful whether intentional caricature occurs in Geometric or Protoattic; a possible instance is a little jug, Athens 304 (*J.d.I.* 1887, 46, Figs. 6 and 7, Pfuhl, *M.u.Z.* iii, 80.

[2] Fairbanks 262, Pl. 21.

tradition.' Definitely Protoattic are fragments of an amphora from Phaleron (Pls. 48, 49 *a*, *b*).[1] They are flimsy work; the helplessness of the arms, particularly of the man on the neck, and of the horses' necks and heads, is proof not of earliness but of incompetence; the figures completely lack the old Geometric tension, and the profiles of the men shew that the vase must not be placed too early in Early Protoattic. The most interesting feature is the drapery with reserved patches, which hangs clear of the body on either side. Similar drapery occurs on a lone figure on the neck of a dumpy amphora in New York (Pl. 50);[2] the mantle, with its panels of Geometric ornament (including a reclining goat) and tassels on the ends, gives this gentleman a very smart appearance; in spite of his sword he is not a soldier,[3] but one of the processional dignitaries with long staves who later

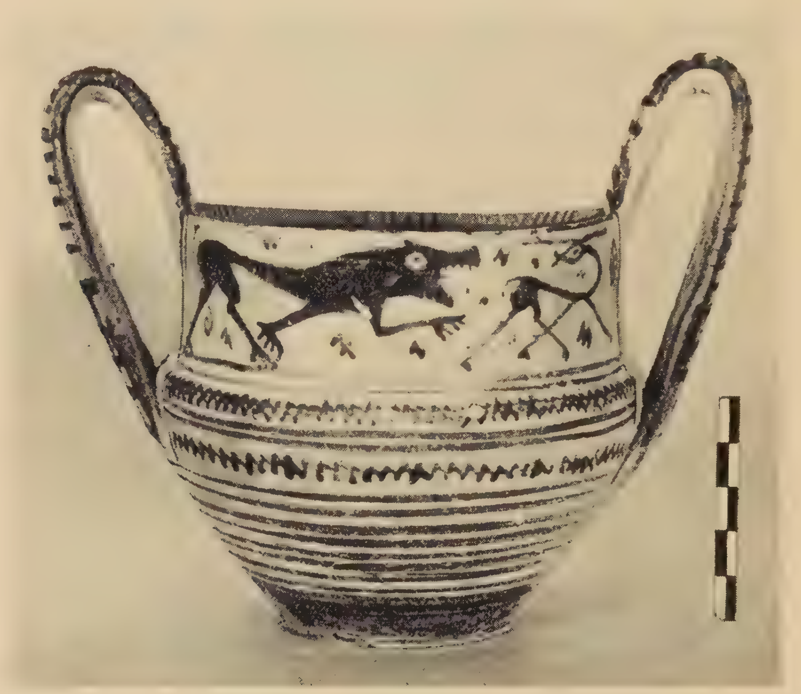

FIG. 8.—GEOMETRIC KANTHAROS IN VLASTO COLLECTION.

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[1] From Inst. Phot. N.M. 3820–3822. 'Εφημ. 1911, 249. Cf. p. 168, n. 2.

[2] 21. 88. 18. From a Museum photograph. *Metropolitan Museum Bulletin* 1923, 176 Fig. 7.

[3] πᾶσα γὰρ ἡ 'Ελλὰς ἐσιδηροφόρει' Thuc. i. 6. (The application is Beazley's.)

become popular in Middle Protoattic.[1] The chariot procession on the body is affected: yet the attenuated forms of man and beast, stilted and archaistic though they may be, are far from being Geometric; the accurately drawn profiles, cross-hatched hair and reserved chests and necks of the men, the manes of the horses and the skilfully drawn bird in flight on the neck-panel point again to a date not too early in Early Protoattic. Another more or less contemporary piece is a sherd in a private collection from the shoulder of an amphora or hydria (Pl. 49 *c*); the object growing from the sphinx's head is paralleled on the sherd Fig. 2 and the little jug in Munich (p. 181).[2]

Two large amphorae, both perhaps from the same hand, fall into the Early Protoattic period. One, in Eleusis Museum,[3] contained, when found, nine small vases, but they are of little use for accurate dating: that this piece is not true Geometric is clear from the inconsequent filling-ornament and the form of the bird on the neck-panels, which Skias took for an ostrich. The other, a fragmentary amphora from the Acropolis,[4] has very similar birds and filling-ornament: in spite of a Geometric maeander band on the body it must belong fairly late in Early Protoattic; the incised lines which follow the outlines, the lanky forms of man and beast, the interior detail on the figures, the strange round patch on the human buttock (Pl. 54 *e*) and the advanced drawing of details (*e.g.* the knee-joint) point forward to Middle Protoattic. No human head survives on fragments of this vase, but the head and shoulders of a man appear on a sherd also from the Acropolis, which comes from a very similar vase almost certainly by the same hand;[5] the face is painted in silhouette, but the developed drawing of the profile and the oval eye demand a date well on in Early Protoattic.

The miserable amphora from Pikrodafni[6] must also have been painted about the end of Early Protoattic. The representations on this vase are odd; on the belly a singular of boars, with a solitary hound perhaps indicating a hunt, on the neck-panels an animal of doubtful ancestry which Hirschfeld took for an elk,[1] and two winged men facing a shrub generally assumed to be a ‘ sacred tree.’ There are also a number of amphorae of this period with only vegetable ornament, one in Berlin,[2] another in Athens from Phaleron,[3] a third in Eleusis.[4]

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[1] That the dress hanging over the shoulders here and on the fragments from Phaleron is the mantle can hardly be disputed. It cannot be the chiton because of the position and the tassels; the κιθὼν θυσανωτός was not an article of archaic Greek dress. Also, on the Phaleron fragments the full dress of the other figures is contrasted with the simple chiton of the charioteer. Ornamental designs, though infrequently, do occur on mantles elsewhere in Orientalizing art (cf. the Boeotian pithos, Hampe *Frühe Griechische Sagenbilder*, Pl. 37, and the Menelaos stand, p. 189). The convention by which the mantle is shewn as though carried over the shoulders is analogous to that whereby the φᾶρος is shewn suspended over the corpse in Geometric prothesis scenes. A more developed but similar treatment of the mantle is found on a plaque in New York (see p. 195, n. 3) and an amphora in Boston (Fairbanks 556).

[2] Its meaning is uncertain; on the little jug in Munich and a Late Geometric oinochoe which I saw in a dealer's shop it is represented as a single looped thread issuing from the sphinx's head. In Middle Protoattic and Protocorinthian it was certainly treated as a floral ornament: it may nevertheless be by origin a helmet crest. Cf. helmeted sphinxes on contemporary metalwork and later on Cretan Orientalizing vases.

[3] Ἐφημ. 1898, 91, Pl. 3, 2.

[4] Graef, Pls. 11 and 12 no. 345; a fragment here Pl. 54 *e*.

[5] Δελτ. 1915, παράρτ. 38.

[6] Athens 222, *B.C.H.* 1893, Pls. 2 and 3.

## Middle Protoattic

Several of the vases already discussed have pointed the way forward to Middle Protoattic in draughtsmanship, ornament and the contrast of light and dark on rays and cable patterns. Three good examples of the latest stage are the Thebes krater (p. 174), the Karlsruhe krater (p. 175) and the little jug in Munich (p. 181). Whether any works of the ‘ Black and White ’ style are to be dated as early as these three vases is uncertain, but it is clear that this style was their legitimate successor.

In Middle Protoattic amphorae and hydriae are comparatively rare. The straight-sided Analatan type went out of fashion, to return little altered at the end of the seventh century.[5] The ordinary neck-amphora, the most permanent of Attic vase-forms, is rare in this period, while the ‘ one-piece ’ amphora with a fairly low neck curving into the body (cf. Pl. 60) which came as a logical development of the Early Protoattic amphora did not become popular till the end of Middle Protoattic. The vase form most characteristic of Middle Protoattic is the krater, πολλῶν μορφῶν ὄνομα ἕν. The medium-sized egg-shaped krater described on p. 170 did not last long in this period. It was superseded by—perhaps it would be fairer to say transformed into—the big krater of which Munich 1350 [6] is a good example, with no upstanding lip and the greatest diameter high up with a strong curve above it and not much curve below; this type has generally two upright semicircular handles, frequently doubled; sometimes the vase was potted with a high foot, sometimes it stood on a separate stand. This shape was extremely popular in the early ‘ Black and White ’ style, but towards the end of it a new shape, the ‘ kotyle-krater,’ came into favour. The ‘ kotyle-krater ’ (cf. Pl. 55 *e*) is well named, for it provides a very good parallel to the kotyle of Late Geometric and Early Protoattic in its form and in its evolution from a wide-mouthed bowl with a strongly curved wall and narrow ring-foot to a straight-sided bowl with a foot little narrower than its mouth; in Middle Protoattic it usually has a grooved rim and two flat ‘ returning ’ strap-handles.

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[1] *Annali* 1872, 137.

[2] *Inv.* 31007. Neugebauer, p. 8.

[3] Δελτ. 1916, 29 Figs. 15 and 16. Cf. p. 170.

[4] Museum no. 823. Ἐφημ. 1912, 33 Fig. 14.

[5] Good examples in Eleusis (*J.d.I.* 1903, 146 Figs. 12–13) and Boston (Fairbanks 556, Pl. lxv).

[6] *A.A.* 1910, 57 Fig. 9.

In the figure-scenes on Middle Protoattic vases there is a stronger urge towards vigorous action. Processions still continue, but the chariots now race and frequently overtake one another. Animals and men often appear in scenes of combat, generally unequal, stronger beasts preying on weaker, soldiers beating down their opponents while the dead and wounded grovel on the ground. Mythological scenes appear, Menelaos leading a procession, three Ithacans leaving Polyphemos’ cave, and Nessos being killed by Herakles. In the figure-drawing there is an accession of new details, interior drawing of knee and elbow, bands across men’s necks, ankles and wrists and across the waists of men and horses, decorative ornamental and figure-designs on skirts and shields; and a quaint interest in the lesser breeds of creation, the ‘ one-eyed owl,’ [1] the grasshopper,[2] and various forms of marine life.[3] The filling-ornaments become more solid, the filling with dots of rosettes and palmettes being replaced by stuffing with a solid core and the use of alternate black and white; a peculiar feature is the ornamental goose-bills stuck on to loose ends of spirals, which are very common in the ‘ Black and White ’ style and occasionally appear later.[4] There is in the course of the ‘ Black and White ’ style a great advance in technical skill. Incision becomes competent; it is, especially towards the end, not infrequently relieved by the use of thin white lines on the black varnish. White paint, sometimes applied on varnish, sometimes direct on the clay, was used extensively on surfaces such as drapery and male and female flesh, and above all in contrast with black on alternate figures of men and women, lions,[5] horses, etc., and on alternate ornaments or sections of ornaments, rosettes, rays, tongues, lotuses,[6] cable-patterns, millsail patterns and bands of up-ended ‘ cigars.’ Applied red paint was hardly used in the ‘ Black and White ’ period; it came to supersede white as a colour for retouching in the later years of Middle Protoattic.

## THE ‘ BLACK AND WHITE ’ STYLE

The distinguishing characteristic of this style is a liberal use of white paint, sometimes for slight retouches, as in Protocorinthian, but much more often for balancing of masses and for contrast in the decoration. Four pieces make the transition from the old style to the new intelligible. The first is a coarse krater in the collection of Mr. Vlasto. In shape this piece is similar to the Munich and Karlsruhe kraters (pp. 174, 175); for ornament it has a middle band of Geometric lattice pattern, above which are palmettes with alternately black and white leaves, and below which are alternately black and white rays. It cannot be much later than the other two kraters. The second is a neck fragment in Eleusis (Pl. 51 *a*);[1] the remains of the horse on the right in this photograph have a Geometric form which is not exceptional in Early Protoattic, but is incongruous in Middle Protoattic, and the palmette pattern to the left is typical of the ornate floral style of advanced Early Protoattic: on the upper register on the left are remains of a black and a white skirt. This is the first example of the use of white as a contrast colour on a Protoattic figure scene, and cannot be much later than, if as late as, the Thebes krater. The third piece is a large, ugly amphora from Hymettus in Berlin.[2] Here the surface of the clay is highly polished as on most works of Middle and Late Protoattic, and has the reddish tinge particularly fashionable on works of early Middle Protoattic. On the Hymettus amphora there is a free use of added white paint:[3] on the warriors on the neck and the main body frieze it occurs on the box of the helmets and on alternate partitions of the crests, on swords, on greaves, which here appear for the first time in Protoattic, and in spirals painted on the naked thighs. This use of white for the marking of details, together with the more modern form of the helmet, the marking of eyelashes, the designs, including a Boeotian shield[4] and a fox, painted in Geometric style on the round shields, the hanging shield-straps, and above all the composition of the soldiers in a number of duels instead of a file, are obvious indications of the Middle Protoattic period. Also, the long-legged horses with their enormous stride, particularly the ridden ones, are in form very close to those of early ‘ Black and White ’ vases to be considered later. In general it can be said of the Hymettus amphora that the figure-drawing is primitive, but shews that contemporary work of a higher quality would be classed with Middle rather than Early Protoattic. There is also a fragmentary oenochoe in the Agora Museum with a horse and rider similar to the Hymettus ones.[5] The fourth piece bridging the gap between Early Protoattic and the ‘ Black and White ’ style is a krater fragment from Anavysos in the collection of Mr. Vlasto (Pl. 51 *c*); its ornament and the remains of draped figures above point back into Early Protoattic, but the use of white on face, neck and wing of the sphinxes puts it certainly into Middle Protoattic. This piece shews perhaps more clearly than any other that the interval between the Thebes krater and the ‘ Black and White ’ style is not great.

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[1] *J.H.S.* 1912, Pl. 10.

[2] Graef 361.

[3] Graef 300 and 365 (Pl. 54 *d*) and *A.J.A.* 1936, 194 Fig. 10. An interesting Geometric example is Lullies *Antike Kleinkunst in Königsberg*, Pl. 2, 7.

[4] Cf. the ornament growing from the ground on the Cretan fragment, *B.S.A.* xxxi, Pl. 17, 1.

[5] *A.A.* 1932, 201 Fig. 7.

[6] Graef 376.

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[1] From Inst. Phot. Eleusis 357.

[2] F. 56. *J.d.I.* 1887, 43, Pl. 5.

[3] The actual colour is nearer to milk chocolate.

[4] Cf. the shield devices of the Benaki amphora (p. 168): for the survival of the Boeotian shield in the ornament of Protoattic cf. a little jug in New York (*Metropolitan Museum Handbook*, 61 Fig. 35 (ed. 1, 50 Fig. 27)).

[5] Burr 210.

The ‘ Black and White ’ style shews a very different spirit from that of Early Protoattic. There has been a change from one personality to another: the one was disciplined but subtle, the other is adventurous and incongruous, gradually developing a fine individual idiom. The jug which is the masterpiece of this later personality has been recognized in turn as Cycladic, Argive, Cretan, Protocorinthian and Aeginetan; like so many works of the ‘ Black and White ’ style it was found in Aegina. Although the shape is otherwise unknown in Protoattic [1] there is no question that the vase is Attic; [2] the clay, slip and varnish find close enough parallels on Attic sherds in Aegina Museum and elsewhere. The Institute Photo (Pl. 53) [3] supplies all that is lacking in the original publication.[4]

By the painter of this, the Ram Jug, are three published pieces from ‘ Opferrinne ’ 2 in the Kerameikos; [5] the distinctive draughtsmanship of the mug with the procession cannot be that of anyone but the Ram Jug painter,[6] and Kübler’s observation that these pieces from ‘ Opferrinne ’ 2 are the work of a single painter is undoubtedly right. The face of the charioteer on the lid fragment leads to a very close comparison with a krater stand found in Aegina, on the main register of which appears a file of men in ceremonial dress led by one distinguished by the inscription ΜΕΝΕΛΑΣ; [7] above all, the bull-neck seems to be the mark of the same painter.

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[1] The shape occurs in fabrics of Corinth, Crete and East Greece, and was most popular in the third quarter of the seventh century: in East Greece it continued longer. See Payne *J.H.S.* 1926, 208 n. 25, and Rumpf *J.d.I.* 1933, 69, 70 and 75 (‘ Kanne platter Form,’ 17 East-Greek examples).

[2] As long ago noted by H. B. Walters and G. M. A. Richter.

[3] From Inst. Phot. N.M. 2612, by permission of Prof. G. Welter. It is of course only supplementary to the drawings in *A.M.* 1897, and part of the shoulder including the greater part of the head and trunk of a third man has been omitted in the photograph. White paint was used on the men’s flesh and on each human head for three or four wavy lines painted on the varnish longitudinally dividing the hair on the neck.

[4] *A.M.* 1897, 324, Figs. 40 and 41, Pl. 8. Pallat argued that, since there was not room on the shoulder for three rams of the size of the one whose whole length is preserved, the back half of one of them must have been missing, and it must therefore have been represented as half in the cave: but it is clear that the group on the left in the photograph was painted on a smaller scale than the central one. If, as seems probable, the group on the right was also painted on a smaller scale, the three groups could have been fitted into the available space, and the disproportion can be explained not only by carelessness but by a very proper desire to mark out Odysseus and his monster ram (μήλων ὄχ’ ἄριστος ἁπάντων).

[5] *A.A.* 1934, 211 Figs. 9, 10 and 11, *J.H.S.* 1934, Pl. 10, 2. For the plastic figure on the handle of the Warrior mug cf. two late Geometric mugs in the Louvre.

[6] A good connecting piece is a sphinx sherd in Aegina, to be published by Welter.

[7] Karo *Menelaos auf einer frühattischen Vase* (*Sechsundzwanzigstes Hallisches Winckelmannsprogramm*, 1928). Cf. Hampe, *Frühe Griechische Sagenbilder*, 57, 70, 80, and Fig. 30. Inscrip-

The Menelaos stand, for all the urbanity of the processing dignitaries, is still rather uncouth in its figure-drawing: much more so are the krater fragments already mentioned (Pl. 51 *c*); the sharp knee-joints, incised arse, and peculiar rectangular bun and rounded occiput of this sphinx find close parallels on the Menelaos piece, so I am not afraid to attribute it tentatively, in the absence of more definite evidence, to the same hand. The sphinx fragments stand at the beginning, the Ram Jug at the end, of the 'Black and White' style; in the interval come the Menelaos stand and the pieces from 'Opferrinne' 2: the stand might at first sight be considered the later because it is more sumptuous and painted on a much larger scale, but actually a comparison of details of figure-drawing shews it to be the earlier. To explain this key-dating of the 'Black and White' style I now give a short sketch of certain points in the development of draughtsmanship.

During the greater part of the 'Black and White' style the filling-ornament is exotic; towards the end of it it becomes more sober, at any rate in the home circle of the Ram Jug painter. The earlier four-footed animals have a colossal, long-legged stride and sharp back knee-joints. Their bodies are tubular; later they become more shapely, tapering at the loins. Lions shew a particularly straightforward evolution. Their faces are at first rectangular, the upper and lower outline being parallel, and the upper having projecting bumps on it; towards the end of the 'Black and White' style the profile of the face becomes rounded and the upper outline simplified; their teeth are at first separate prongs as though all were eye-teeth, but later they are all represented as molars, except the two eye-teeth, which are longer and pointed. A good example of a later lion's head can be seen on an oinochoe in the Agora (Burr 214). Another feature of the earlier lions is the paws consisting of long bag-shaped patches of varnish hanging from a thin ankle, with three or four longitudinal wavy lines incised inside. Also, early sphinxes are often hooved. The large, fierce birds that stalk about with nearly spherical bodies and a tail marked only by indentations give place to a more elegant type with a well-articulated tail. In human representations the straight line of the top of the drapery is softened and at the end of the 'Black and White' style the shoulders become evenly rounded; a tail behind at the bottom of the skirt becomes increasingly common. The development in the drawing of the human head is also clear. In the early 'Black and

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tions labelling heroes are rare in Protoattic. They become more common in the first half of the sixth century, when the introduction of conventional attributes was lessening the need for them. To the sixth-century painter the recognition of the scenes he portrayed was more important than optical plausibility. Nonsense inscriptions and the supererogatory ΒΟΜΟΣ, ΘΑΚΟΣ, ΗΥΔΡΙΑ, etc. (cf. the François vase) shew that by the second quarter of the sixth century the use of inscriptions was largely otiose.

White' style the eye is sometimes round, but more commonly an oval set slanting into the head; later it becomes horizontal. The nose is for a long time sharp and pointed, but later becomes less pointed and bulkier, with a pronounced twist where it joins the cheek. The mouth is on earlier pieces often open, and the whole profile, including the forelock, angular, while the hair at the back is drawn in tightly on the neck with a pronounced bun below. In more developed works of the 'Black and White' style this angularity disappears. This brief capitulation of certain points explains the attempt in the next page or two to fit the published works of the 'Black and White' style into the framework already suggested.

Two works which overlap from Early Protoattic into the period of the 'Black and White' style are the egg-shaped krater in the Fitzwilliam Museum (p. 170)[1] and an oinochoe in the Kerameikos Museum.[2] A group of sherds not much later than the sphinx fragment (Pl. 51 *c*) was found in the excavations at the Argive Heraeum (Pl. 52);[3] these come from a stand similar to the Menelaos one. The fabric and much of the drawing is very coarse, and the paucity of filling-ornament indicates that it was not intended to be an expensive piece. That the upper frieze represents the death of Nessos is pretty well certain: the surviving fragments do not shew Herakles, but his handiwork is manifest; his arrow has drawn blood and his sword is threatening the centaur: Deianeira, already naked to the waist, is calling for help. This is the earliest definitely recognizable mythological scene on an Attic, almost the earliest on any archaic Greek, work of art.[4] A sherd from a closed krater of the same period is Graef 412 (Pl. 55 *c*),[1] on which a thin white line was painted on the varnished stern and white spots on the helmsman's dress; from an open krater Burr 144.

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[1] *C.V.A. Cambridge* i, Pl. 2, 7. Cf. an egg-shaped krater in the Agora, *Hesperia* v 1936, 35 Fig. 35.

[2] *A.A.* 1934, 215 Fig. 12, *J.H.S.* 1934, Pl. 10, 1. The facing lion or leopard is not very common before Late Protoattic; once or twice it is expressly marked as a leopard by the addition of rings on the body. The earliest facing lion or leopard occurs on a Late Geometric skyphos in Edinburgh; the face is a reserved square containing a St. Andrew's cross; in the resulting side triangles are painted dots for the eyes, and inside the bottom triangle is a smaller triangle representing the mouth. There are other examples in the Kerameikos Museum among the finds from 'Opferrinnen' 1 and 2, on the New York Nessos amphora (p. 192) and on fragments (*e.g.* Graef 385, Pl. 14).

[3] Waldstein *The Argive Heraeum* ii, 161, Pl. 67. I am informed that Payne has pronounced that these fragments are Attic. Argive Orientalizing has always been a home from home for orphans, and from it I have redeemed the amphora in Würzburg (Langlotz 79) and sherds from the Acropolis (Graef 411, 412 and 414): but that it is not simply a myth is indicated by such pieces as the Aristonophos krater (*Wiener Vorlegeblätter* 1888, Pl. 1) and perhaps a fragmentary amphora in Aegina (*A.M.* 1897, 308 Fig. 31).

[4] It is of course possible that a mythological meaning was attached to the fight between a man and a centaur represented on the neck of the Late Geometric amphora in Copenhagen (see p. 169, *C.V.A. Copenhagen* ii, Pl. 74, 3) and in contemporary plastic art (*A.M.* 1930, Beil. 38) and the farewell or abduction scene on a Late Geometric krater

Similar to the Deianeira of the Heraeum stand is the long-armed monkey-man under the handle of the New York amphora,[2] on which the death of Nessos reappears. This amphora has an uncouthness reminiscent of the Heraeum stand, for instance in the muddling of the heads of the harnessed horses; its filling-ornament looks back towards the Thebes krater, and the horses are closely connected with those of the Menelaos stand:[3] but in its mixture of techniques it has much that is advanced, as the free use of white rings on the deer and the curving of the incised lines to add volume to the owl's body. An interesting motive, for which there are Geometric precedents,[4] is the victor gripping his adversary by the forelock. This amphora is not far removed in date from the Menelaos stand, probably a very slightly backward work of a rather later date. The fragments of a centaur krater in the Kerameikos[5] seem to be, as Kübler says, a little later than the New York amphora; they are painted in a more accomplished style. The legless jockeys of the Menelaos stand find a close parallel in the charioteers on a sherd from a small closed crater (Pl. 54 *a*).[6] Contemporary with the Menelaos stand are unpublished fragments of a krater in Aegina[7] which apparently figured the Nessos story; the complicated palmette systems and the wide-opened lanky hind legs with an incised line running down them connect these sherds in Aegina with the

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in the British Museum (*J.H.S.* 1899, Pl. 8). Protocorinthian provides the closest parallels to the mythological representations of the 'Black and White' style; Mr. T. J. Dunbabin has kindly informed me that some are earlier than the Heraeum fragments. The Aristonophos krater and the Cretan pithos *B.S.A.* xxix, Pl. 12, on whose shoulder is represented what looks like a scene from the *Choephorae*, can hardly be earlier than the Heraeum fragments, and the plate fragment from Praisos (Pfuhl *M.u.Z.* iii 57) is considerably later. See also Appendix A.

[1] Pl. 55 *c*, from a photograph by Mr. R. M. Cook.

[2] Richter *J.H.S.* 1912, 370, Pls. 10–12.

[3] For the wilful archaism in detail, though not of course in general form, of the horses on the shoulder cf. remarks on p. 172. On Attic vases the shoulder-field did not generally receive so much attention as on Cycladic and East Greek; Attic vase-painters preferred the more rectangular fields on the neck and belly. On the Hymettus amphora also the figures on the shoulder are less advanced than those on the neck and belly; and on the Kynosarges amphora (see p. 196 ff.) the figures on the shoulder are painted in a less honoured technique than the others: but the differentiation of a monumental and a decorative type of figures is rare before the sixth century.

[4] Pottier *Vases Antiques du Louvre*, Pl. 20, A 519; *C.V.A. Copenhagen* ii, Pl. 74, 4; *Metropolitan Museum Bulletin* 1934, 170 Figs. 1 and 2.

[5] *A.A.* 1934, 217 Fig. 13.

[6] Graef 364. Similar jockeys, mounted on horses similar to but more primitive than those of the Menelaos stand, appear on a Protocorinthian kotyle, Hampe, *Frühe Griechische Sagenbilder*, Pl. 40.

[7] Py 29.

krater Munich 1350:[1] to these must be added the somewhat earlier fragment Burr 132. To the same period belongs a krater once in the collection of Frau Schliemann;[2] to a fine lid of this time belonged the knob Burr 332. The ceremonial drapery, mantle over chiton, of the procession of the Menelaos stand reappears in a more elaborate form on a sherd in Aegina (Py 29) and another in Eleusis (Pl. 51 *b*), both of which must be nearer in time to the Ram Jug, and on the amphora from Kynosarges (Pl. 58); an earlier example is the sherd *A.M.* 1907, 561.[3]

Two of the three published pieces from ' Opferrinne ' 2[4] have still the exotic ornament of the earlier period; a peculiarity very noticeable on them, which was incipient on the Menelaos stand, is the building-up of the palmette fans until they resemble bunches of grapes. The mug with the procession of women is more sober in ornament and nearer to the Ram Jug in draughtsmanship than the other two pieces. Since they were found all together in one channel which was only used once, it follows that they must be contemporary; this fact is of importance for the dating of the work of the Ram Jug painter because with them was found a fragmentary Protocorinthian aryballos (see p. 201). Also from the same channel are a kotyle and a plate,[5] which are painted in a primitive black figure style with full, though rudimentary, incision and not much applied colour. Contemporary at any rate with these finds is a krater fragment in Amsterdam.[6]

Between this group and the Ram Jug comes a fragmentary krater in the Kerameikos;[7] the ornament of this piece makes it earlier than the Ram Jug, but that it is not much earlier is shewn by the close correspondence of the remaining parts of the white lion to the sphinxes on a fragmentary open krater now lost (Fig. 9);[8] a peculiarity which they have in common is the very low back knee. The lost piece is closely connected with, if not from the hand of, the Ram Jug painter; the fact that no photograph of it has survived makes it impossible to confirm the attribution; it might well be a little earlier than the Ram Jug. Another vase closely connected with the Ram Jug in ornament and the use of thin white lines on the varnish is the Burgon ' lebes ' in the British Museum,[9] perhaps the earliest surviving example of the kotyle-krater:

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[1] *A.A.* 1910, 57 Fig. 9.

[2] I know of this vase from the references Boehlau *Aus Ionischen und Italischen Necropolen*, 107 n. ** and Smith *J.H.S.* 1902, 41 n. 1, and from old prints in the German Institute.

[3] Cf. also pp. 184, 185, n. 1.

[4] *A.A.* 1934, 211 Figs. 9, 10 and 11.

[5] *A.A.* 1934, 211.

[6] *C.V.A. Scheurleer* ii, Pl. 73, 4.

[7] *A.A.* 1932, 196 Figs. 6 and 7.

[8] From *A.M.* 1895, Pl. 3, 2.

[9] Pfuhl *M.u.Z.* iii 82; a lion *J.H.S.* 1926, 207 Fig. 1. White was applied in thin lines on the shoulders and paws and on alternate teeth of the lions. The loop pattern on the reverse of the main zone takes the form of standing 8's with a small circle inside both circles and another between each 8.

the drawing of the lions is here less advanced; this vase might be earlier than the ‘ Opferrinne ’ 2 finds. Probably by the same hand as the Burgon krater are an unpublished sherd in Aegina (Fr. 29), on which is a lion's head, and an oinochoe in Athens,[1] which has a lion's protome rather more advanced in type. Perhaps by the Ram Jug painter are an Acropolis sherd (Pl. 55 *b*),[2] on which the outlines of eyebrow and nose coalesce in the same way as on the men on the Ram Jug, a fragment of a stand (Pl. 54 *c*),[3] on which is a very finely painted dog, and various sherds.[4] To the end of the ‘ Black and White ’ style belong an oinochoe in the Agora,[5] a fragment of a krater from Menidi (Pl. 54 *g*),[6] and a ring-vase [7] and sherds [8] from the Acropolis.

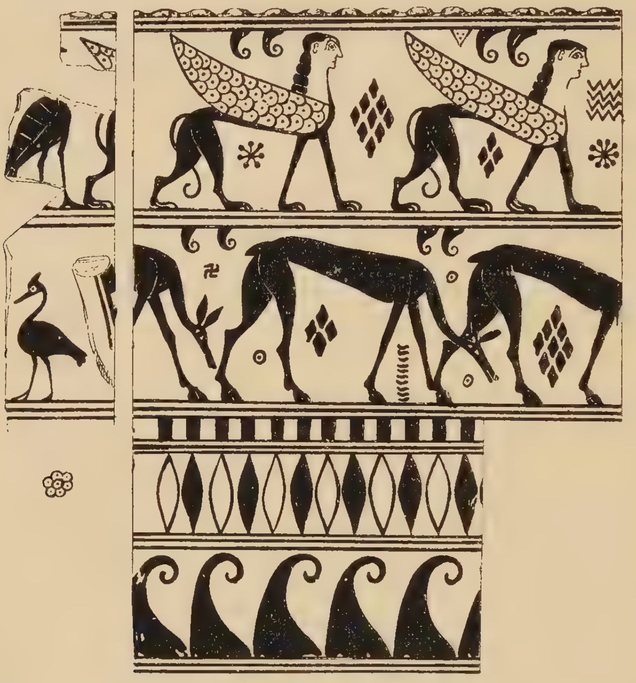

Fig. 9.—Fragments from Krater, Formerly in Athens

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[1] *J.d.I.* 1887, 52 Fig. 14, Pfuhl *M.u.Z.* iii 83.

[2] Graef 367*a*; cf. also 347.

[3] Graef 370.

[4] Burr 215, Graef 357 and 375, and several unpublished sherds in Aegina Museum.

[5] Burr 214.

[6] *J.d.I.* 1899, 125 Fig. 8. The lion has the massive proportions of the animals of the Kynosarges painter.

[7] Graef 351.

[8] Graef 411 (a fragment Pl. 55 *d*), 368 (cf. Pl. 54 *b*) etc.

### THE PERIOD OF THE KYNOSARGES AMPHORA

At this point the career of the Ram Jug painter seems to have come to an end and the 'Black and White' style to have gone out of fashion. In the ordinary figure style of the interval between the end of 'Black and White' and the period of the Nessos painter the usual technique was now, at any rate for animals, black figure with incision: applied colours were used only for retouches, red quite frequently on manes, parts of wings, necks, stripes on the lower belly of animals, the eye, and eventually on the human face,[1] white less frequently. On the more ambitious works of this period, however, gaudier effects were aimed at. A group of polychrome vases in the Kerameikos Museum was found in 'Opferrinne' 1; according to Kübler's notice of them[2] the clay was 'graugrünlich bis rötlich' and covered with a white slip, on which the colours used were 'Hell- und Dunkelrot, Grauschwarz, leuchtendes Rostbraun, das in Gelb verfärbt'; incision was not used. The abundance of plastic ornament found in 'Opferrinne' 1 indicates that this polychrome grave furniture represents an unusually expensive burial; in all probability the manufacture of such vases was a luxury trade, and both limited and short-lived.[3] The polychrome technique was used also on relief plaques and on painted terracotta miniature shields;[4] the colours on these are white, red, yellow and bluish green. More or less contemporary with the finds from 'Opferrinne' 1 are sherds from an amphora on which a brown paint was applied on human flesh,[5] and from a krater on which a light chocolate colour was used on the neck of a leopard (Pl. 55 *a*);[6] a sandy brown was also used on the box of a helmet on a plaque from the Acropolis.[7] I doubt whether the polychrome technique ever appears again in Protoattic. There were also found in 'Opferrinne' 1 some smaller vases with friezes of animals in the new black figure style with red retouches,[8] which were painted by the same hand as the Kynosarges amphora (Pls. 56–58); they appear slightly earlier than it.[9] Another technique which occurs in this period is the liberal use of red and white to obtain a balance of masses; the resulting tricolour effect is quite striking when the colours are still fresh on a polished yellow or buff ground. This technique was used, for instance, on the main body frieze of the Kynosarges amphora, on a fine fragment in Athens from Aegina (Pl. 54 *f*),[1] and on sphinxes on a fragmentary kotyle-krater in the Kerameikos.[2]

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[1] Occasionally for naturalistic detail, as for blood in Late Protoattic (cf. Johansen, 144 for the earliest Protocorinthian example). Red is not used for fire, rouge, etc., in Protoattic. White is used by the Nessos painter on eyeballs.

[2] *A.A.* 1934, 208.

[3] The prothesis scene on the oenochoe *A.A.* 1933, 273 is paralleled on a relief plaque from Olympos in Attica, now in New York (*Metropolitan Museum Handbook* (1917), 56 Fig. 32, *J.H.S.* 1922, 217 Fig. 13).

[4] For plaques see Burr, p. 606 and particularly no. 277; for shields see Burr, p. 609.

[5] Burr 133.

[6] Graef 369. The colour on the chariot-box on the sherd Pl. 54 *b* (Graef 368 *b*) seems to be a dilution of the varnish.

[7] Graef 414.

[8] See *A.A.* 1933, 270, Fig. 10.

[9] See Appendix B.

In the decade which follows the end of the Black and White style human figures are sturdier than before, animals thicker, especially in the chest. Grandiose filling-ornament reminiscent of the 'Black and White' style appears on works of the Kynosarges painter; the combination of elaborate workmanship and sheer carelessness visible in the ornament is typical of him.

## THE KYNOSARGES AMPHORA

The Kynosarges amphora has been published by Sir Cecil Smith (*J.H.S.* 1902, 29); his text is a valuable contribution to the study of Protoattic, but the illustrations are rather inadequate. Since an additional publication seems to be a responsibility of the British School I have written this note in part simplifying and supplementing Smith's account. The whole of the fragments of this vase are now in the National Museum. I publish on Pls. 56–58 photographs of the neck-panel and the surviving pieces from the front of the body. The back was decorated with superimposed rows of loops: there were two tiers of them on the neck covering a depth corresponding to that of the figure-field on the front and bounded at top and bottom by thick horizontal lines; on the body were apparently two tiers corresponding in position to the main figure-field and a third below: the loops were carelessly and unevenly painted, varying considerably in height and shape (note the brushwork on the upper tier on Pl. 57 *b*). The minor friezes were not continued on the back. The very elaborate handles were decorated in front only, and were open at the back (cf. the Nessos amphora). The shape of the vase cannot be accurately determined, as hardly any pieces from the under part of the body have survived; the greatest diameter (about 75 cm.) seems to be a little below the middle of the main figure-field, but it is clear that the body was irregular in both vertical and horizontal section. Smith estimated the height at 1·40 m. as compared with the 1·22 m. of the Nessos amphora: I doubt whether it was so high as Smith supposed, as a surviving fragment from the band of rays seems to shew that the lower part of the belly curved in more strongly than he suspected.

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[1] Benndorf *Griechische und Sicilische Vasenbilder*, Pl. 54, 1 (in colours). As a pendant to Menelaos on the stand from Aegina Beazley has suggested that the dignitary on this fragment is Agamemnon (*A.J.A.* 1935, 475).

[2] *J.H.S.* 1936, 141 Fig. 4, *A.J.A.* 1936, 544 Figs. 4 and 5. This piece is transitional to Late Protoattic.

Smith's reconstruction (*J.H.S.* 1902, Pl. 4) must not be taken as an illustration of his real views on the original appearance of the vase; actually he recognized that there must have been a third figure to the right of the wrestlers on the neck since an outstretched hand painted in white is just visible above the big rosette (Pl. 56 *b*).[1] Now, a line vertically bisecting this field would fall well to the right of the intersection of the wrestlers' feet; therefore a line vertically bisecting the shoulder frieze must fall well to the right of the spot where the heads of the grazing horses come together: there must therefore have been a smaller figure or large ornament extending for a distance of about 12 cm. to the right of the right-hand horse. The dimensions of the main field on the body were approximately 96 cm. by 45 cm. The firing was careless and on the greater part of this field the varnish is a bright red (note the change on the forelegs of the winged horses on Pl. 57 *b*); the varnish on the horse's chest, the wing and the spiral ornament on Pl. 57 *b* and on the neck- and shoulder-panels is a uniform black. The surface of the clay on the body-field is unusually red for Protoattic; there was originally a yellow wash which has lasted fairly well on the neck but disappeared elsewhere. Applied white was used on the flesh of the wrestlers on the neck, on the faces and necks of the figures on the body, on the lower drapery of the two left-hand figures on the body (a scale pattern and a band of rays being afterwards painted in varnish on the white chiton of the left-hand one), and apparently on the arms and chiton of the charioteer (the chiton being afterwards decorated with spots of varnish); white was also used on the horses' wings (cross strokes on the black middle part of the wing and little loops in the partitions of the wing tips). Red paint was applied on the necks of the horses on the shoulder, on the quills of the wings of the harnessed horses (note the continuation on to the chest) and on their nostrils; on the box of the chariot inside the incised lines, but not on the wheel (note that here the red paint actually shews darker than the varnish); red was also used in all panels on the filling-ornament; in the case of the human figures it was applied on the pupils of the eyes, painted over the varnish on the mantles (the projecting hand remaining black), on the beard of the man in the middle on the body, and apparently on the belt and the hanging locks of the charioteer. The head of the man in the middle on the body is a good example of the balanced use of red, white and varnish. A peculiarity of the main scene is the enormous wheel, which, if a circle is described from the two remaining fragments, must have been 23–24 cm. in diameter, more than half the height of the whole frieze; the result of this is that the left-hand figure was quite twice the height of the charioteer. Another oddity is the big hoof, which is just the same width as the charioteer's head.[1]

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[1] The hand extended palm upwards probably represents intercession for mercy from a relative or friend of the loser, as on the neck of the Nessos vase the extended hand represents the victim's own plea. But this interpretation can hardly be applied to the 'Klagefrauen' on the Kerameikos mug *A.A.* 1934, 213 Fig. 11, and it is doubtful whether it is to be applied to the fallen warrior on Pl. 52 *a*. On Pl. 52 *f* the hand raised in a Fascist salute may be an appeal for help or jubilation at deliverance. There are practically no conventional attitudes in Protoattic except in the Würzburg group; the Attic painter of the seventh century was reluctant to compromise his freedom. The attitudes representing generalizations of action (as the 'Knielaufschema' of running) or transient moods (*e.g.* both hands upraised in terror or clasped in suspense, or one raised to the head in distress or melancholy) were little affected by the Protoattic artist: he preferred a photographic treatment, action rather than attitude. The representation of moods is in any case commoner in sixth- than in seventh-century art.

In addition to the smaller works from ' Opferrinne ' 1, the Kynosarges painter was perhaps the painter of a fragmentary bowl in the Agora.[2]

### THE GAP BETWEEN THE KYNOSARGES AND NESSOS AMPHORAE

What comes between the Kynosarges amphora and the Nessos amphora[3] is at present not very clear. The development of the black figure style of the Nessos painter and his colleagues from the animal style of the Kynosarges painter is easily intelligible, but it is harder to account for the sudden appearance of a completely new self-confidence and stability which makes Late Protoattic vases really grand. As Pfuhl remarked, ' Hier ist alles einfach und gross gesehen.' [4] The fact that this new quality is present in the works not only of the Nessos Painter but also of his less gifted contemporary, the Painter of the Peiraeus amphora [5] and another fragmentary amphora in the Kerameikos Museum,[6] argues that by the time of the Nessos painter it was well established and that the transformation must have occurred earlier. It is possible that the finds from Vari will supply the link which is at present missing; among them are many fragments of the work of a painter who combined the magnificent composition of Late Protoattic with a style of drawing still reminiscent of Kynosarges. A very fine example of this painter's work is a sherd in the collection of Mr. Vlasto (Pl. 59 *a*); [1] another link between the Kynosarges and Nessos painters is a fragment of a krater in Berlin (Pl. 59 *b*),[2] painted in a similar style, perhaps with a touch of the higher humour.

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[1] The suggestion that this scene represents the dead man setting out on his last journey has little to commend it, unless the vase-painter was deliberately repudiating mythological tradition (cf. Homer ω *init.*). The full beard marks the central figure as elderly in contrast to the wrestler on the neck—the more precise marks of old age such as wrinkles and white hair do not so far as I know appear in Attic until after the beginning of the sixth century—and the winged horses suggest that he is setting out under divine escort. Possibly he is Tantalos about to return from the celestial dinner-party, or a hero already familiar in Attic art who was promised divine guidance in his last journey (Homer δ 561–4)

σοὶ δ' οὐ θέσφατόν ἐστι, διοτρεφὲς ὦ Μενέλαε,
Ἄργει ἐν ἱπποβότῳ θανέειν καὶ πότμον ἐπισπεῖν,
ἀλλά σ' ἐς Ἠλύσιον πεδίον καὶ πείρατα γαίης
ἀθάνατοὶ πέμψουσιν.

If this scene is an allegory of death, I can suggest another for the neck: Heracles, Thanatos, Alkestis.

[2] Burr 194.

[3] Athens 1002, *Antike Denkmäler* i, Pl. 57.

[4] *M.u.Z.* I, 123.

[5] Athens 353, Ἐφημ. 1897, 67, Pls. 5, 6.

[6] *A.A.* 1935, 293 Fig. 19.

It is hard to pin down any characteristics of this fugitive period between the Kynosarges and Nessos amphorae; in it the most typical shapes are the one-piece amphora with a low neck curving into the body, and the kotyle-krater (cf. p. 186). Dot and solid rosettes begin to replace the Middle Protoattic filling-ornament,[3] and there is a tendency to incise the outlines as well as the interior of figures, as on Protocorinthian of the middle and third quarter of the century. Besides two pieces mentioned above [4] which continue the tricolour technique, the following other pieces fall into this period: fragments of a krater from Menidi, on which the outlines of the lions are incised,[5] a krater in the Kerameikos Museum, which is shewn by the lotus and palmette ornament to be earlier than the Nessos vase,[6] a sherd in the Agora, which combines an incised rosette with remains of a human figure painted in white,[7] the fragmentary krater from Vourva (Pl. 55 *e*),[8] and the Siren amphora in Athens (Pl. 60).[9] The less advanced goose type indicates that the Vourva krater is earlier than the Nessos amphora. The Siren amphora is also shewn by the filling-ornaments and details of drawing, the incised outlines, the straight bandeau and the primitive form of the 'Etagenperücke' to be earlier than the Nessos vase, but both it and a rather more developed vase of the same shape in the Agora[1] may perhaps be from the hand of the Nessos painter.[2] Also in this period belong unpublished sherds in Eleusis[3] and elsewhere.

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[1] I am much indebted to the late Mr. Vlasto for allowing me to see material from Vari in the magazines of the National Museum and to publish a photograph of the sherd Pl. 59 *a*. He christened this painter the Lion painter.

[2] Inv. 31333. From a Museum photograph. Cf. the fragment Graef 387.

[3] The older filling-ornament appears to a limited extent in Late Protoattic; a notable example of its survival is the amphora London A 1531, *B.C.H.* 1898, 285 Fig. 5, Jacobsthal *Ornamente griechischer Vasen*, Pl. 7.

[4] The fragment Pl. and the Kerameikos kotyle-krater with sphinxes.

[5] *J.d.I.* 1899, 110 Fig. 16.

[6] *A.A.* 1933, 264 Fig. 5.

[7] Burr 337, not from the votive deposit.

[8] *A.M.* 1890, 323, Pl. 10. This type of kotyle-krater with birds on the front, loop- or spiral-patterns on the back, and sometimes a millsail pattern under the handles, became popular in this period. Cf. a fragment in the Kerameikos (*A.A.* 1934, 209 Fig. 8) and a later piece in Leipzig (*A.A.* 1923, 51 Fig. 3) which has birds of Late Protoattic type.

[9] *B.C.H.* 1898, 283 Fig. 4. This shape of amphora had appeared rather earlier. It was specially adapted for a single large panel representation, and was taken over by the painters of the horsehead amphorae. Although no surviving horsehead amphorae are as early as this the horse protome was already familiar; whirligigs of horse protomes appear on the Late Geometric amphora fragments in Mr. Vlasto's collection (p. 167) and on the plate in the Kerameikos from 'Opferrinne' 2; horse protomes also appear on a little stand from Liopesi in Mr. Vlasto's collection (see p. 201) and elsewhere.

## CHRONOLOGY OF PROTOATTIC

There is in Protoattic nothing that points to an absolute dating; I have tried to shew that there is some justification for an internal relative dating, but for anything further one must turn to the vase-painting of Corinth. Payne's dating of Corinthian as advanced in *Necrocorinthia* is generally accepted, and that must be the starting point in the search for an absolute dating of Protoattic. Payne (*NC.* 344) appended an outline of the chronology of Attic vase-painting contemporary with Corinthian: in this he placed the Nessos and Peiraeus amphorae between 620 and 600 B.C., that is contemporary with Early Corinthian; of Piraeus, which he considered to be rather earlier than Nessos, he wrote 'an attempt to transfer Protocorinthian technique and style to an Attic vase of giant scale,' which means that he considered this piece (and with it other contemporary Attic vases) to be imitating works of a distinctly earlier date, in fact to be backward. Now, the recent finds from Vari shew that the Attic vase-painters of this period were far from being imitators of their rivals in Corinth; Late Protoattic and Early Corinthian now appear as parallel manifestations, Attic on a more ambitious scale, of the same movement in Greek vase-painting. Payne himself realized since writing *Necrocorinthia* that Attic must be dated earlier in relation to Corinthian. The Nessos vase and its immediate circle are not so late as the general run of Early Corinthian vases, whereas the unpublished Chimera amphora in Aegina and a very fine krater by the same hand in the National Museum,[4] which are rather later than the Nessos amphora, have much in common with the best work of Early Corinthian. I therefore propose to date the Nessos and

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[1] *Hesperia* ii 2 (1933), 457.

[2] A list of the published works of the Nessos painter has been made by Beazley (*A.B.F.*, 11 note); the Hamburg fragment is now published (*A.A.* 1928, 297 Fig. 22, and in von Mercklin's guide Pl. 6 no. 60). To be added are some fragments in the Kerameikos Museum (*A.A.* 1934, 218) and from Vari including fragments of a krater in Mr. Vlasto's collection with the deliverance of Prometheus; probably also a sherd with a man's head and an owl standing on a twig, which is exhibited among Acropolis fragments in the National Museum in Athens, and another sherd shewing part of the head and shoulders of two unkempt male figures and an inscription, which I believe to be in Vienna.

[3] Inst. Phot. Eleusis 359 (the two on the right) and 361 (the upper piece mentioned Payne *Necrocorinthia* 344).

[4] *Society of the Friends of the National Archaeological Museum of Athens* 1934–5, 10 Figs. 8 and 8*a*. Beazley notes the connection with these of London A 1531 (p. 199, n. 3).

Piraeus amphorae about the time of the beginning of Early Corinthian, that is 625.[1]

Certain resemblances between the Transitional style of Corinth (according to Payne 640–625) and Attic ware which I class between the Kynosarges and Nessos amphorae[2] incline me to suppose that they are contemporary;[3] I therefore put the Kynosarges amphora about 640. This date has already been selected by Miss Burr[4] on the evidence of the finds from the votive deposit in the Agora. The latest Protocorinthian pottery there must be dated very near to 650; therefore the latest Protoattic, of which one or two pieces (171 of course excepted) may be as late as the Kynosarges amphora, cannot be earlier or much later than 650. The date of the Kynosarges amphora is discussed further in Appendix B.

This dating is supported by two groups of Attic vases with which Protocorinthian aryballoi were found. The first is a group of small vases from Liopesi, now in the collection of Mr. Vlasto; among them are two little stands, which have as ornament the heart-shaped palmette system supported by props at the side which is common on the lesser vases from 'Opferrinnen' 1 and 6, but inside the palmettes is a 'grape bunch' fan similar to those on the vases from the earlier 'Opferrinne' 2; other small details subscribe to the conclusion that the Liopesi find must be dated between 'Opferrinnen' 1 and 2: now it included two little Protocorinthian vases, a kotyle and an aryballos, both decorated with a band of running dogs, the aryballos almost identical with one in Oxford[5] which Payne dated 'second quarter of the seventh century, probably not much before the middle.' The second group is 'Opferrinne' 2 itself, in which was found the fragmentary aryballos *A.A.* 1934, 205 Fig. 3: this piece Kübler dates just about 650, comparing it with the aryballoi Payne *Protokorinthische Vasenmalerei*, Pl. 22, 3 and 4, and Pl. 23, 4, but the incision on the Kerameikos piece is less advanced and its shape looks decidedly earlier; the safest guess seems to be the middle of the second quarter of the century. Since the latest works of the 'Black and White' style are distinctly later than this, but no works of that style are as advanced as either the Kynosarges group or the Chigi vase, the end of that style must be placed somewhere about 650.

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[1] It would be rash at present to fix a date for the end of Late Protoattic: I cannot go further than saying that to me the Gorgon painter (*NC.* 191 ff., 344, 346) is no longer a Protoattic painter.

[2] *E.g.* the use of red on the human face, the lean arched body of seated lions and sphinxes, and the mixture of occasional solid rosettes with the usual dot-rosettes and of motives of the new style with those of the old.

[3] The sherds from the 'Gang' at Menidi, which include Pl. 54 *g* and *J.d.I.* 1899, 110 Figs. 16 and 17, were found on a lower level than a pear-shaped aryballos and much Corinthian. The finds from the tomb at Vourva (*A.M.* 1890, 318) are of no use for the chronology of this period.

[4] *Hesperia* ii 4 (1933), 636.

[5] *C.V.A. Oxford* ii, III c, Pl. 1, 384, 18.

The beginning of the 'Black and White' style cannot yet be fixed; the evidence from finds containing Protocorinthian is almost negligible. In the Louvre are three objects on a stand,[1] a terracotta statuette with a curled-up nose, a Protocorinthian oinochoe-neck with Geometric decoration, and a sherd apparently from the neck of a Protoattic amphora or hydria in early 'Black and White' style; these three objects were found together in a tomb at Megara: this find, however, is of little value for the dating of Protoattic. With the Hymettus amphora was found a little jug of rather unusual shape,[2] for which perhaps a fair parallel is one found in tomb 32 at Phaleron [3] together with a Protocorinthian pyxis of Johansen's archaic style A; [4] and with the big amphora from tomb 18 at Phaleron (p. 170),[5] which from its florid ornament can hardly be earlier than the end of Early Protoattic, was found an aryballos of fairly advanced Archaic Style A.[6] There is therefore some slight reason for placing the change from Early to Middle Protoattic towards the end of Johansen's archaic style A. The 'Black and White' style should cover approximately the same period as the Protocorinthian archaic style B; besides a general resemblance in the figure-scenes there are occasional close parallels in the ornament (*e.g.* Payne *NC.* 10 Fig. 5, 98 Fig. 30).

The evidence for dating Early Protoattic depends largely on the finds from Pelekidis' excavations at Phaleron. The Attic vases from this cemetery are unfortunately almost all cheap uniform pieces extending with little variety of shape and decoration well down into the second half of the seventh century. They are of little use in dating the more ambitious vases of the same period, but when considered in mass they make it clear that the Protoattic style came in before the end of the period of the globular aryballoi. The best group is tomb 48,[7] in which six Protocorinthian 'aryballes intermédiaries' (between the globular and ovoid types) and a kotyle of the subgeometric style were found with an assortment of Attic kotylai and little jugs of rather better quality than is usual in these graves and with decoration quite free from Geometric influence.

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[1] Room L (Céramique Grecque), Case A no. 458. See Johansen, 21, 23.

[2] Berlin F. 57. *J.d.I.* 1887, 51, no. 7, Fig. 12.

[3] Δελτ. 1916, 39 Fig. 38, 2.

[4] Δελτ. 1916, 35 Fig. 29; Johansen, Pl. 24, 1. I have used Johansen's chronology, as it is more explicit than that advanced by Payne in *Protokorinthische Vasenmalerei*; the chronology which I am advancing seems to me to correspond closely with that of Payne.

[5] Δελτ. 1916, 29 Figs. 15, 16.

[6] Δελτ. 1916, 38 Fig. 36; Johansen, Pl. 21, 1, p. 83.

[7] Δελτ. 1916, 21. Cf. tomb 29, where an 'aryballe intermédiaire' was found with an Early Protoattic krater.

Further evidence leading in the same direction can be derived from the evolution of the kotyle. An Attic kotyle with an upright wall was found with the latest hydria of the 'Mesogeia' painter (p. 176); with the same painter's middle hydria was found a kotyle of definitely more rounded profile; yet more rounded is another kotyle in Eleusis, while the Protocorinthian and Attic kotylai found with Late Geometric vases are more rounded still. The Eleusis kotyle (Fig. 6) [1] has on the lip a dog painted in Early Protoattic style; since it is Protoattic and earlier than the kotyle found with the middle hydria of the 'Mesogeia' painter it must be roughly contemporary with the Analatos hydria (p. 166): with it was found a fairly late globular aryballos.[2] It seems certain that Protoattic overlapped Johansen's period of the globular aryballoi by some years, perhaps as much as a decade.[3] With the middle hydria of the 'Mesogeia' painter were also found two little standed bowls, of which one still adheres to the old-fashioned Geometric division of the bands into panels, while the other has broken through it: of these two vases it is true to say that at the same time and in the same workshop two vases of the same size, shape and purpose were produced, one being Geometric and the other Protoattic. This middle hydria of the 'Mesogeia' painter, which I have assumed to be contemporary with the Eleusis sphinx fragment (p. 172), gives a convenient date for the end of Geometric as an independent fabric.[4]

If Johansen's absolute date of 725 for the change-over from the period of the globular aryballoi to that of the ovoid is accepted, the earliest Protoattic must be dated in the third quarter of the eighth century. This makes a period of upwards of eighty years from the beginning of Early Protoattic to the end of the 'Black and White' style. Since the works of this period are in my opinion closely dependent on the activity of two great painters, and the interval between the two cannot be great, it seems to me that eighty years is too large an estimate and Johansen's date too early. But unless a new kind of evidence turns up this question can only be answered by a close study of the Protocorinthian vases found in the colonies of Magna Graecia. Until the results of such a study are available a precise dating is impossible; but I venture to say that not only the development of Protoattic, but also the number of globular aryballoi found in the early colonies favours a date in the neighbourhood of 700 for the change from the globular to the ovoid aryballoi. Using this date I give at the end of this paper a table of pieces which seem to admit of being placed in a chronological sequence over a period of a hundred years; the number of these pieces and the frequency at which they follow one another suggest a conventional interval of five years.

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[1] Museum no. 882. See p. 181.

[2] Ἐφημ. 1912, 37 (tomb 62), Johansen, Pl. 4, 7. The other grave groups at Eleusis are not much use, and the stratification is not trustworthy.

[3] Another argument is that Attic imitations of Protocorinthian globular aryballoi have usually Orientalizing ornament.

[4] By this I mean that whereas previous works of Late Geometric had been made in Late Geometric workshops, subsequent works which look Geometric are to be classed as subgeometric products of Orientalizing workshops.

## DISTRIBUTION

Of the distribution of Protoattic pottery outside Attica not much needs saying. In the Early Protoattic period the export of Attic vases was considerably smaller than it had been in the middle period of Geometric. The exports to Boeotia[1] and Aegina[2] continued throughout. A little early Middle Protoattic was found at the Argive Heraeum,[3] and a few sherds, dating perhaps from the beginning of the 'Black and White' style onwards, have been found at Megara and Perachora. A more surprising find is a small Attic jug in Copenhagen, with fairly coarse decoration which might belong to either Early or Early Middle Protoattic; it is said to have been discovered in a Punic tomb near Cadiz.[4] In the last quarter of the seventh century Attic vases were exported to Italy and Egypt; the earliest recognized piece from Italy is a fragment from the hand of the Nessos painter,[5] and the earliest from Egypt an olpe from Naukratis in London.[6]

[1] *E.g.* the early Protoattic amphora in the Louvre CA 1960 and the Thebes krater.

[2] In Aegina the finds belonging to the end of Geometric and the beginning of the Orientalizing phase of all fabrics are few; there is a little Attic ware of this period.

[3] The fragments of the stand Pl. 52 and other sherds Waldstein *A.H.* II Pl. 62, 1 and perhaps 2, and one fine unpublished sherd in the Argive Heraeum room in the National Museum.

[4] Museum no. 8673. I am indebted to Prof. P. Fossing for this information. This vase is also referred to *J.H.S.* 1936, 171 n. 92.

[5] In Leipzig *A.A.* 1923, 46 Fig. 1. Since writing the above paragraph I have noted a small late Geometric bowl-pyxis in the Villa Giulia (Veio t. 815, 21). I was not able to take the vase out of the case, but can see no reason for doubting that it is Attic.

[6] *J.H.S.* 1929, 253 Fig. 1.

## Provisional Chronological Table

| | | | |
|---|---|---|---|
| B.C.<br>725 | Amphora in Athens 894<br>(*J.d.I.* 1899, 197 Fig. 61). | Late Geometric (later phase). | |
| | Amphora in Berlin Inv. 3203<br>(*A.A.* 1892, 100 no. 4). | | |
| | Amphora in Copenhagen<br>(*C.V.A. Copenhagen* ii, 73, 3). | | |
| | Amphora in Oxford 1935, 19 (Pl. 38 *a*). | | Early Protoattic. |
| | Hydria in Athens 313 (Pls. 38 *b*, 39)<br>(*J.d.I.* 1887, Pl. 3). | | |
| 700 | Fragment in Eleusis Museum 1089 (Pl. 40 *a*)<br>(Ἐφημ. 1912, 5). | | |
| | Amphora in Louvre<br>(*Bulletin des Musées de France* March 1936, 34). | | |
| | Krater in Munich 1351 (Pl. 41)<br>(*J.d.I.* 1907, 78). | | |
| | Lid in British Museum (Pl. 42 *a*). | | |
| | Krater in Athens 238 (Pl. 42 *b*)<br>(*J.d.I.* 1887, Pl. 4). | | |
| 675 | Fragment in Vlasto Collection (Pl. 51 *c*). | ‘ Black and White ’ Style. | Middle Protoattic. |
| | Fragments in Athens (Pl. 52)<br>(Waldstein *Argive Heraeum* ii, 161) | | |
| | Stand from Aegina<br>(*Hallisches Winckelmannsprogramm* 26). | | |
| | Vases in Kerameikos Museum (‘ Opferrinne ’ 2)<br>(*A.A.* 1934, 211 Figs. 9, 10 and 11). | | |
| | Fragment formerly in Athens (Fig. 9)<br>(*A.M.* 1895, Pl. 3, 2). | | |
| 650 | Jug in Aegina Museum (Pl. 53)<br>(*A.M.* 1897, 324). | | |
| | Vases in Kerameikos Museum (‘ Opferrinne ’ 1)<br>(*A.A.* 1933, 271 Figs. 6–10). | | |
| | Amphora in Athens (Pls. 56–8)<br>(*J.H.S.* 1902, 29). | | |
| | Sherd in Athens 2226 (Pl. 54 *f*)<br>(Benndorf, Pl. 54, 1). | | |
| | Sherd in Vlasto Collection (Pl. 59 *a*). | Beginning of Late Protoattic. | |
| 625 | Amphora in Athens 1002<br>(*Antike Denkmäler* i, Pl. 57). | | |

J. M. Cook.

# APPENDIX A

## Early Mythological Representations in Greek Art (see pp. 91–2)

Dr. R. Hampe, in his brilliant study *Frühe Griechische Sagenbilder*, attempts to date a large mass of mythological representations in the eighth and early seventh centuries.

The works adduced by Hampe which can be most certainly dated in the eighth century are those in pure Geometric style. Here attention is concentrated on the representations of the Molione. Hampe's arguments for their existence in Geometric art are very attractive, but the krater in New York (*op. cit.*, 47 Fig. 21, *A.J.A.* 1915, Pls. 21–23), on which they occur three times in one frieze, throws suspicion on their mythological significance: and the fact that after the Geometric period they disappear suggests strongly that these twins are nothing more than the creation of artists faced with the difficulty of filling a space too broad for a single figure and too narrow for two. The representation of a single body and extremities in duplicate would naturally suggest itself to artists already accustomed to paint horses in that convention, just as it was rejected by the Orientalizing artist accustomed to the use of incision and applied colour.

To the period 750–650 B.C. Hampe assigns the various classes of Boeotian engraved fibulae which he discusses; if his arguments for their dating are correct, mythological representations go back to the third quarter of the eighth century. At first sight this seems improbable, and the evidence for so early a dating is by no means conclusive. That derived from grave groups is slight. That fibulae were made in the pure Geometric period is clear from their appearance in graves of that period. But there is no direct evidence for the presence of Boeotian fibulae with engraved designs before the seventh century. The earliest dateable examples are Hampe no. 142 (*op. cit.*, 7, *J.H.S.* 1910, 344 Fig. 7), one of three found in grave 75 at Rhitsona, and Hampe nos. 143 and 144 from grave 6 at Rhitsona (*op. cit.*, 7, where they are accidentally referred to under the numbers 121 and 122, *J.H.S.* 1910, 343 Figs. 6 and 8), all of which are dated by the Protocorinthian vases found with them to the beginning of the seventh century: it is significant that the fibulae from these graves are decorated not with figures, but with simple Geometric designs. There is no direct evidence for fibulae with figure representations as early as this. Dating from stylistic criteria is difficult, because the engraving on the fibulae is of such poor quality that it affords very little opportunity for comparison with more dateable work, and the figures must be judged on general form rather than details. One point, I think, is important. In Geometric art until the end of the Late Geometric period the chest and buttocks of human figures are so sharply and decisively separated that they must be conceived of as two distinct members. The Analatos hydria (cf. Pl. 39) shews clearly the beginning of the transition to the full Orientalizing period when the whole trunk is treated as one mass narrowing at the waist. On backward works of the first half of the seventh century the trunk is treated in a quasi-Geometric manner. To use a homely figure, it is as though one took a sausage and tied a string more or less tightly round the middle of it; it would still be possible to squeeze the meat from one half into the other. To apply this criterion to vases illustrated by Hampe, V 45 (*op. cit.*, Pl. 26) and the London krater (*op. cit.*, Pl. 22), though belonging to an advanced period of Late Geometric, are still pure Geometric in drawing: but on the Boeotian vases of the Orientalizing period the chest and buttocks form one mass; V 9 (*op. cit.*, Pl. 29) is a good example of this, because it shews narrow and broad waists alongside. I think any unbiassed observer must agree that the figures even on the earliest of Hampe's classes of fibulae conform to the allantoid type. The Argive terracotta shield from Tiryns in Nauplia (*op. cit.*, 81), on which Amazons appear for the first time shews affinities both to fibulae of Hampe's two earlier classes and to Attic vases of the early ' Black and White ' style.

A third class of mythological representations dated by Hampe to the early seventh century is the Boeotian relief pithoi. Once again it seems improbable that representations such as that on the neck of the pithos R 1 (*op. cit.*, Pls. 36 and 38) can be as early as the beginning of the seventh century. The Boeotian pithoi with designs in relief are akin to those found in Thera and Rhodes in graves of considerably later date. Hampe illustrates three Boeotian examples (*op. cit.*, Pls. 36–39), ranging them in a chronological sequence which is certainly correct. For their absolute dating Attic vase-painting gives the best parallels. R 1 recalls vases of the ' Black and White ' style: the legs and body of Perseus, the weakness of the junction of his shoulders and arms, and the ornament behind him belong to the same stage of development; his face is not unlike those of the Heraeum stand (Pl. 52). The animals on the body recall Linear Cycladic; they are at the same stage of development as the Stockholm amphora (*J.d.I.* 1897, Pl. 7) and the griffin jug (*J.H.S.* 1926, Pl. 8). This class of Cycladic vases extends over a considerable period, from the beginning of the seventh century (*e.g.* the amphora from grave 90 in Dragendorff's *Thera*, which is by no means the earliest of this class) to at least the beginning of the third quarter (*e.g. J.H.S.* 1926, Pl. 10, where the lion is distinctly more developed than those of the ' Black and White ' style). The Stockholm amphora and the griffin jug belong to an advanced period in Linear Cycladic; the griffin jug can well be compared with the New York Nessos amphora (see p. 192). The pithos R 3 is more developed. The band of lying spirals finds parallels in the same position on the Kynosarges (Pl. 57 *a*) and Nessos amphorae; the Kynosarges amphora was probably not unlike it in shape.

The riders on the body are rather more developed than those of the Menelaos stand (see p. 189); the Menelaos stand affords the best parallel for the procession on the neck. R 4 is in shape not unlike the Nessos amphora; probably both that and the Kynosarges amphora with their ornamental handles imitate relief pithoi. The massive, well-developed figures on R 4 are similar to those of the Kynosarges amphora; the drawing of the knee is strikingly similar: and the position of the kneeling man reminds one not of Middle Protocorinthian, but of Attic of the period of the Nessos painter. I think R 1 is to be dated in the second quarter of the century, R 3 little if anything before the middle and R 4 definitely after the middle.

Lastly, the works of ' Kleinplastik ' illustrated by Hampe, Pls. 30–31, can hardly be used for comparison with Boeotian art. The centaur group 3a, the Boston deer and the ivory and bronze statuettes 1 and 2a are definitely Geometric. The affected Boston deer is closely akin to deer on a pyxis in Cambridge. The bronze statuette is the latest of these: according to Geometric tradition the head, chest and lower part are separate members—as the chest is meant to be seen from the front and the rest from the side, the figure cannot be seen as a whole in either side or front view—but the waist is beginning to soften, and the statuette is little earlier than the Analatos hydria. The ivory statuette is more sharply separated at the waist; the flatness of the profile is due to the material. The vases with which it was found (*op. cit.*, Pls. 32–3) belong to the early phase of Late Geometric and are fully twenty years earlier than the group of the amphora Kerameikos 337 illustrated on the same plates, which is only very slightly earlier than Analatos hydria.

# APPENDIX B

## THE CHRONOLOGY OF THE KYNOSARGES AMPHORA AND THE PROTOATTIC 'OPFERRINNEN' IN THE KERAMEIKOS (see p. 195)

The dating of the Kynosarges amphora raises a problem. Kübler in his reports on the Kerameikos excavations in the *Anzeiger* dates 'Opferrinne' 1 well before the middle of the century (1933, 267; 1934, 207), 'Opferrinne' 2 about the middle of the century (1934, 203), and 'Opferrinne' 6 (cf. 1933, 275 Fig. 11) and 'Pithosgrab' x (cf. 1934, 219 Figs. 14 and 15) at the beginning of the third quarter (1934, 214 and 217). From his reports this much certainty can be extracted: 'Opferrinnen' 1 and 2 are on the same level (1934, 205), and the excavations in themselves have given no indication of their date in relation to one another; 'Opferrinne' 6 is on the same level as 'Opferrinne' 1 (1933, 270–5), but to be dated later because it comes between the mound of 'Opferrinne' 1 and a later mound (1934, 201); the 'Pithosgrab' has broken through the level of 'Opferrinne' 2, and is therefore later than it (1934, 199). The finds from the 'Pithosgrab' are of little moment in the development of Protoattic; I therefore confine myself to the three 'Opferrinnen.'

The vases from 6 are fairly closely connected in technique, style and ornament with the lesser finds from 1; I suspect the same hand: the chronological difference between 1 and 6 is very small. The finds from 2 have a uniformity of their own, and shew little connection with those from 1 and 6.

The connections of the vases from 2 with the 'Black and White' style are obvious (see pp. 189, 193). The connection of 1 with the Kynosarges amphora has been noted by Kübler (1934, 209); it rests chiefly on the identification of the lesser vases from 1 as works of the Kynosarges painter: the connection of 6 with the Kynosarges amphora has also been noted by Kübler (1933, 275). The group formed by the 'Opferrinnen' 1 and 6 and the Kynosarges amphora is fairly closely connected with Protocorinthian, unfortunately not closely enough to give an accurate dating by comparison. If the Kynosarges group is earlier than 'Opferrinne' 2—that is to say contemporary with the earlier 'Black and White' style—what is the relation between it and the 'Black and White' style? There are two possible solutions.

The first is that one of the two is not Attic. No specimens of the Kynosarges group have been found outside Athens and its environs; it must be Attic. The 'Black and White' style could from its distribution have only one home outside Attica—that is, of course, Aegina—and though vases of the 'Black and White' style have been found in large quantities there, there are strong objections to such a location. Welter has pronounced Aeginetan clay unsuitable (cf. Payne *NC.* 39 n. 1), and the clay of these vases is indistinguishable from Attic; vases in the ‘Black and White’ style have been found in various parts of Attica, particularly in the Kerameikos, the potters’ headquarters; Aegina had no ceramic tradition, and was even then importing large quantities of another ware, Protocorinthian, which was definitely not made in Aegina; finally, the ‘Black and White’ style seems to develop out of Early Protoattic (see pp. 187–189).

The other solution is that the ‘Black and White’ style and the Kynosarges group are contemporary products of Attic vase-painting. If that is so, each should develop from Early Protoattic and into Late Protoattic. The Kynosarges group does shew a few Geometric survivals in the shape of the lesser vases, which are, however, very much altered, and in certain ornaments on the Kynosarges amphora (the zigzag filling ornament and the diamond pattern under the horses) which recur on works of a definitely later date. But there is no connection with Early Protoattic in drawing or technique except through the ‘Black and White’ style. The ‘Black and White’ style, on the other hand, has obvious connections.

In the development to Late Protoattic there is a similar contrast. From the ‘Black and White’ style there is none except through the Kynosarges group. But from the Kynosarges group there is a well-marked development. The bell-neck and ornamental handles of the Kynosarges amphora connect it with the Nessos vase in Athens. The polychrome technique of the larger vases from ‘Opferrinne’ 1 cannot be dated by comparison with other fabrics; it is as different from Protocorinthian polychrome as fresco painting is from tempera, and its use for figure painting can only be paralleled by the relief plaques, which do not seem to have become popular until the third quarter of the century. The tricolour technique of the main panels of the Kynosarges amphora is connected with works of the third quarter only. The black-figure technique with incision and red retouches as it appears on the shoulder of the Kynosarges amphora, and with occasional enhancement in white as on the lesser vases from ‘Opferrinne’ 1, is essentially that of Late Protoattic: it has no parallels in the ‘Black and White’ style; for red scarcely occurs there, and I know of only one (unpublished) sherd of the first half of the century where it is used instead of white, and that sherd cannot be connected with the Black Figure style as these vases are. The ornament of the Kynosarges group links up with that of Late Protoattic. A common feature is the spiral pattern with blobs (cf. *J.H.S.* 1902, Pl. 2 *e*; the same pattern occurs in the same position on the Nessos amphora). Perhaps more striking is the development of the palmette; in the ‘Black and White’ style the fans are divided into small, almost rectangular leaves (cf. the lowest band on the mug *A.A.* 1934, 211 Fig. 9), which gradually become larger and more rounded at the ends; whereas the large, well-stuffed and well-rounded leaves of the palmettes of the Kynosarges group fall typologically among those of the second half of the century, a good parallel being the krater in the Kerameikos *A.A.* 1933, 269 Fig. 5, which cannot be earlier than the third quarter. Finally, the figure-drawing shews the same evolution towards amplitude. The quills on the wings of animals in the ‘ Black and White ’ style are angular; they gradually become more rounded at the ends: in the Kynosarges group they are generously rounded (cf. Pl. 58 *b*). Above all, the muscular strength of the human figure on the Kynosarges amphora is similar to that of Late Protoattic, and quite unlike the loose-limbed lankiness of the ‘ Black and White ’ style. Surely the comparison of knee, calf, instep and toes on Pls. 53 and 56 *b* is convincing enough.

Although the later stage of the development between the Kynosarges group and Late Protoattic is well illustrated (*e.g.* Pls. 54 *f*, 55 *e*, 59 and 60), no good example is available of the stage which immediately follows the Kynosarges group. But a fragmentary amphora decorated with sphinxes and horse protomes, which was recently on the market, illustrates the connection in minor details, and I have seen fragments which I think bring the Kynosarges painter very close to the painter of Pl. 59 *a*. I find it very difficult to believe that the Kynosarges group is anything but the successor of the ‘ Black and White ’ style; ‘ Opferrinne ’ 1 must therefore be later than ‘ Opferrinne ’ 2.

# SELECT INVENTORY

| | PAGES |
|---|---|
| Late Geometric (*ca.* 750–700) | |
| *Amphora.* (See pp. 167 ff.) | |
| Agora Museum | 168 |
| Amsterdam (*C.V.A. Scheurleer*, i, 23, 1) | |
| Amsterdam 6249 | |
| Athens 184 (*J.d.I.* 1899, 193 Fig. 56) | |
| Athens 894 | 167, 205 |
| Athens 897 (Fig. 4, *J.d.I.* 1900, 53 Fig. 114) | 181 |
| Athens 898 (Collignon-Couve, Pl. 11 no. 210) | |
| Athens (Δελτ. 1920–21, 134 Fig. 4) | |
| Benaki Museum | 168, 188 |
| Berlin 3203 | 167–8, 205 |
| Boston | 183 |
| Cleveland 1927. 27. 6 | 181 |
| Copenhagen | 169, 191, 205 |
| Mannheim | |
| Oxford 1935. 18 (Fig. 5) | 181 |
| Philadelphia MS. 5464 | 167–8 |
| Philadelphia | 167 |
| Toronto | 168–9 |
| Vlasto Collection. Frs. | 167–9, 199 |
| *Aryballos* | |
| *jug-aryballos* | |
| Athens (Πρακτ. 1911, 118 Figs. 7 and 8) | |
| Munich | |
| *Protocorinthian type* | |
| New York (*Metr. Mus. Bull.* 1927, 18 Fig. 2) | |
| *Bowl-pyxis* | |
| cf. Πρακτ. 1911, 119 Fig. 10. | |
| *Standed bowl.* (See p. 170.) | |
| Athens 746, 752 (*A.M.* 1893, Pl. 8, 1) | |
| New York (*Metr. Mus. Bull.* 1911, 35 Figs. 8, 9) | 180 |
| Vlasto Collection | 203 |
| *Hydria* | |
| Athens (Πρακτ. 1911, 123 Fig. 23) | |
| Empedokles Collection | |
| Louvre (Fölzer *Die Hydria*, Pl. 2 no. 19) | |
| Mainz O 2031 (Fölzer *Die Hydria*, Pl. 2 no. 18) | |
| Munich (*A.A.* 1914, 471 no. 3) | |
| *Kantharos* | |
| Athens (*J.d.I.* 1887, 54 Fig. 17) | |
| Louvre CA 1987 (Hampe *Frühe Griechische Sagenbilder*, Pl. 26 V. 45) | 207 |
| Vlasto Collection (Fig. 8) | 182–3 |

| | PAGES |
|---|---|
| Late Geometric (*ca.* 750–700)—*continued* | |
| *Kotyle* | |
| Athens 15271 (Δελτ. 1920–21, 133 Fig. 3) | |
| Athens (Πρακτ. 1911, 120 nos. 15 and 16) | |
| Vlasto Collection | |
| *Krater* | |
| *closed* | |
| Athens | 167–8 |
| *egg-shaped.* (See p. 170.) | |
| Athens (*A.A.* 1935, 411 Fig. 1) | |
| Athens 747, 748 (*A.M.* 1893, Pl. 8, 1, Collignon-Couve, Pl. 16 no. 348) | |
| *open* | |
| Athens 810 | 167 |
| Athens (*J.d.I.* 1899, 111 Fig. 19) | |
| London | 192, 207 |
| *Mug.* (See p. 170.) | |
| Athens 138 (*J.d.I.* 1899, 209 Fig. 80) | |
| Athens 847 (Collignon-Couve, Pl. 14 no. 254) | |
| Athens (Δελτ. 1920–21, 132 Figs. 2, 8, 11) | |
| Louvre | 189 |
| *Oinochoe* | |
| *burial oinochoe* | |
| Cf. Δελτ. 1920–21, 132 Figs. 2, 6, 11 | |
| *ordinary oinochoe or jug* | |
| Cf. *A.M.* 1893, Pl. 8, 2, Δελτ. 1920–21, 134 Figs. 8 and 12 | |
| *miniature jug.* (See p. 170.) | |
| Cf. Πρακτ. 1911, 116 Figs. 1 and 2 | |
| *Shallow bowl or phiale* | |
| Cf. *A.M.* 1893, Pl. 8, 1, Δελτ. 1920–21, 134 Fig. 4 | |
| *Skyphos or cup with offset lip.* (See p. 170.) | |
| Athens (*A.M.* 1893, 113 Fig. 10) | 169 |
| Edinburgh | 191 |
| | |
| Early Protoattic (*ca.* 710–680) | |
| *Amphora* | |
| *upright type.* (See p. 166.) | |
| Copenhagen 8988 | 175 |
| Louvre (*Bulletin des Musées de France* 1936, 34) | 173–4, 177, 205 |
| Louvre CA 1960 | 175, 204 |
| New York 10. 210. 8 (Pl. 47) | 179–80 |
| Oxford 1935. 19 (Pl. 38*a*) | 169, 178, 205 |
| Oxford 1936. 599 | 169, 172 |
| Würzburg 79 | 179–81, 191 |
| Amphora formerly in dealer's hands | 179–81 |
| *ordinary neck-amphora.* (See p. 180.) | |
| Athens 222 | 185–6 |
| Athens (Δελτ. 1916, 29 Figs. 15, 16) | 171, 186, 202 |
| Athens. Frs. (Pls. 48, 49*a*, *b*) | 168, 184–5 |

| | PAGES |
|---|---|
| Early Protoattic (*ca.* 710–680)—*continued* | |
| Athens. Frs. (Pl. 54*e*, Graef 345) | 171, 185 |
| Berlin 31006 | 179 |
| Berlin 31007 | 186 |
| Eleusis ('Εφημ. 1898, Pl. 3, 2) | 185 |
| Eleusis 823 | 186 |
| New York 21. 88. 18 (Pl. 50) | 184–5 |
| *Aryballos* | |
| *jug-aryballos* | |
| Kiel 80 | |
| *Protocorinthian type* | |
| Athens (*B.S.A.* 1905–6, 89 Fig. 11) | |
| Athens ('Εφημ. 1911, 249 Fig. 8) | |
| Athens (Δελτ. 1916, 44 Fig. 46) | |
| Empedokles Collection | |
| Munich (Johansen, 174 Fig. 117) | |
| Vlasto Collection | |
| *Standed bowl.* (See p. 170.) | |
| Athens. Frs. ('Εφημ. 1911, 250 Fig. 14) | |
| Eleusis 1089. Frs. (Pl. 40*a*) | 172–3, 203, 205 |
| Vlasto Collection | 203 |
| *One-handled cup.* (See Δελτ. 1916, 45, Early and Middle Protoattic; sometimes with filter and spout, *e.g.* Athens 14890, Eleusis 1093) | |
| *Hydria.* (See p. 166.) | |
| Athens 313 (Pls. 38*b*, 39) | 166–9, 172–4, 176, 178, 203, 205, 207–8 |
| Berlin 31312 (Pl. 43) | 176–8 |
| Vlasto Collection (Pl. 44) | 176–8 |
| Vlasto Collection (Pls. 45, 46*a*) | 172, 176–8, 203 |
| Vlasto Collection (Pl. 46 *b*, *c*) | 176–8, 203 |
| Würzburg 80 | 178 |
| *Kotyle.* (See p. 170.) | |
| Athens (Δελτ. 1916, 33, 34) | |
| Eleusis 882 (Fig. 6) | 181, 203 |
| Vlasto Colllection | 203 |
| *Krater* | |
| *egg-shaped.* (See p. 170.) | |
| Empedokles Collection | |
| Otago (*J.H.S.* 1936, 236) | |
| *open* | |
| Aegina. Fragmentary | |
| Athens 238 (Pl. 42*b*) | 174, 186, 188–9, 192, 204–5 |
| Athens (Phaleron t. 29) | 202 |
| Athens. Fr. (*A.M.* 1907, Pl. 25) | 178 |
| Karlsruhe. Fragmentary | 175–6, 186, 188 |
| Munich 1351 (Pl. 41) | 173–5, 178, 188, 205 |

| | PAGES |
|---|---|
| Early Protoattic (*ca.* 710–680)—*continued* | |
| ? *with upright rim* | |
| Formerly in Athens. Fr. (Fig. 2) | 176–8, 185 |
| *Lid* | |
| London (Pl. 42*a*) | 174, 205 |
| *Mug.* (See p. 170.) | |
| Athens (Δελτ. 1916, 46 Fig. 50) | |
| Kiel 85 | |
| Manchester (Fig. 7) | 181 |
| *Oinochoe* | |
| Athens (’Εφημ. 1911, 249 Fig. 8) | |
| Athens (Δελτ. 1916, 39 Fig. 37) | |
| *miniature jug.* (See p. 170, Δελτ. 1916, 39.) | |
| Berlin 5826 | |
| London | 181–2 |
| Munich J 221 | 181–2, 185–6 |
| New York (*Metr. Mus. Handbook*, 61 Fig. 35) | 188 |
| *Plaque* | |
| Athens (Pl. 40*b*) | 173 |
| *Small pyxis.* (See Δελτ. 1916, 36.) | |
| *Miscellaneous* | |
| Aegina Fr. 29. Fr. | 175 |
| Agora. Fr. (Burr 162) | 175 |
| Athens. Fr. (Δελτ. 1915, παράρτ. 38) | 185 |
| Athens (Phaleron tombs 48 and 29, grave groups) | 202 |
| Eleusis 841. Fr. (Fig. 1) | 175 |
| Heidelberg B I. Fr. | |
| Leipzig T 2382 | |
| Fragment in private collection in England (Pl. 49*c*) | 185 |
| *Unvarnished pots with incision* | |
| Athens (Δελτ. 1916, 26 Fig. 8) | |
| Early or Middle Protoattic | |
| *Amphoriskos* | |
| Athens (Δελτ. 1916, 44 Fig. 47) | |
| *Aryballos* | |
| *Protocorinthian type* | |
| Athens (Johansen, 174 Fig. 118) | |
| *Krater* | |
| *egg-shaped* | |
| Bonn 900 | 170 |
| *Mug* | |
| Empedokles Collection | |
| *Oinochoe* | |
| Agora. Fragmentary (Burr 210) | 188 |
| Copenhagen 8673 | 204 |

| | PAGES |
|---|---|
| Early or Middle Protoattic—*continued* | |
| *miniature jug* | |
| Athens | 202 |
| Berlin F 57 | 202 |
| *Small pyxis* | |
| Athens 312 (*J.d.I.* 1887, 55 Figs. 19, 20) | |
| | |
| Middle Protoattic (*ca.* 680–630) | |
| *Amphora.* (See p. 186.) | |
| *ordinary neck-amphora* | |
| Athens (Pls. 56–58) | 192–3, 195–9, 201, 205, 207–11 |
| Berlin F 56 | 188, 192, 202 |
| New York 11. 210. 1 | 172, 187, 191–2, 207 |
| ‘ *one-piece* ’ *amphora.* (See Burr, p. 575.) | |
| Athens (Pl. 60) | 199 |
| *Standed bowl.* (See p. 170.) | |
| Agora (Burr 145) | |
| Kerameikos (‘ Opferrinne ’ 1) | 170, 195 |
| Kerameikos (‘ Opferrinne ’ 6) | 170 |
| Kerameikos (‘ Pithosgrab ’ x) | 209 |
| *One-handled cup* | |
| Kerameikos (‘ Pithosgrab ’ x) | 209 |
| *Kantharos.* (See Burr, p. 585.) | |
| Agora (Burr 200–209) | |
| Agora. Fragmentary (Burr 331) | 181 |
| Agora (*A.J.A.* 1936, 194 Fig. 9) | |
| *Kotyle* | |
| Agora (*I.L.N.* 18 July 1936, 120 Fig. 8) | |
| Kerameikos (‘ Opferrinne ’ 1) | 195 |
| Kerameikos (‘ Opferrinne ’ 2) | 193 |
| *Krater.* (See p. 186.) | |
| *closed* | |
| Aegina Py 29. Frs. | 192 |
| Munich 1350 | 186, 193 |
| Formerly in Schliemann Collection | 193 |
| *medium-sized egg-shaped* | |
| Agora | 170, 191 |
| Cambridge | 170, 191 |
| *open* | |
| Agora. Frs. (Burr 144) | 192 |
| Athens. Frs. (Pl. 54 *g*) | 194, 201 |
| Athens. Frs. (*J.d.I.* 1899, 110 Fig. 16) | 199, 201 |
| Athens. Frs. (Graef 387) | 199 |
| Formerly in Athens. Fragmentary (Fig. 9) | 193, 205 |
| Berlin 31333. Fr. (Pl. 59*b*) | 199 |
| Vlasto Collection | 188 |
| Vlasto Collection. Frs. (Pl. 51*c*) | 188–91, 205 |

|  | PAGES |
|---|---|
| Middle Protoattic (*ca.* 680–630)—*continued* |  |
| *kotyle-krater* |  |
| Athens. Fragmentary (Pl. 55*e*) | 199 |
| Kerameikos. Fragmentary (*A.A.* 1932, 196 Figs. 6, 7) | 187, 193 |
| Kerameikos. Frs. (*A.A.* 1934, 217 Fig. 13) | 192 |
| Kerameikos. Fragmentary (*A.J.A.* 1936, 544 Figs. 4, 5) | 196, 199 |
| Kerameikos. Fr. (*A.A.* 1934, 209 Fig. 8) | 199 |
| Kerameikos. Fragmentary (*A.A.* 1933, 269 Fig. 5) | 199, 211 |
| London | 193–4 |
| *large krater with upright rim* |  |
| Athens 2226. Fr. (Pl. 54*f*) | 196, 199, 205 |
| *Lid* |  |
| Agora. Frs. (Burr 157) |  |
| Kerameikos. Frs. (' Opferrinne ' 2) | 189, 193 |
| *lid-knob* |  |
| Agora. Fr. (Burr 332) | 193 |
| *Mug.* (See p. 170.) |  |
| Kerameikos (' Opferrinne ' 2, ' Kriegerbecher ') | 170, 189, 193, 210 |
| Kerameikos (' Opferrinne ' 2, ' Frauenbecher ') | 189, 193, 197 |
| Würzburg 77 |  |
| *Oinochoe.* (See Burr, p. 591.) |  |
| Agora. Fragmentary (Burr 214) | 190, 194 |
| Agora. Frs. (Burr 215) | 194 |
| Athens | 194 |
| Kerameikos (' Opferrinne ' 1) | 195 |
| Kerameikos | 191 |
| *squat oinochoe.* (See p. 189.) |  |
| Aegina. Fragmentary (Pl. 53) | 189–90, 193–4, 205 |
| *miniature jug.* (See p. 170.) |  |
| Athens 304 |  |
| Athens 206, 859 (*J.d.I.* 1887, 52 Fig. 13, 46 Fig. 5), 844, 14889 |  |
| Athens (*A.A.* 1933, 213 Fig. 8) |  |
| Würzburg 56, 57 |  |
| *Shallow bowl or phiale.* (See Burr, p. 582.) |  |
| Agora (Burr 194) | 198 |
| *Plaque.* (See p. 195.) |  |
| Agora (Burr 277) | 195 |
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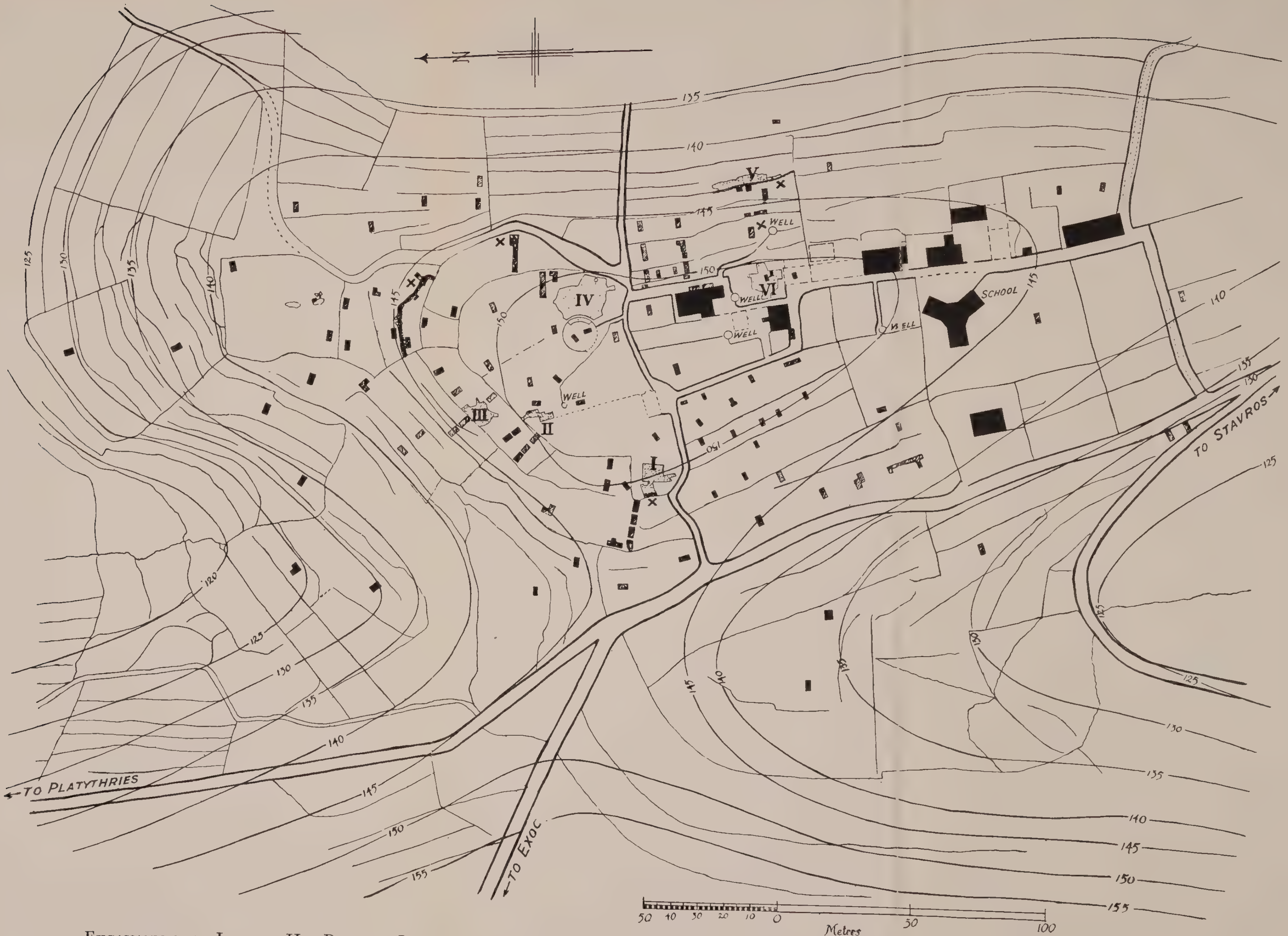
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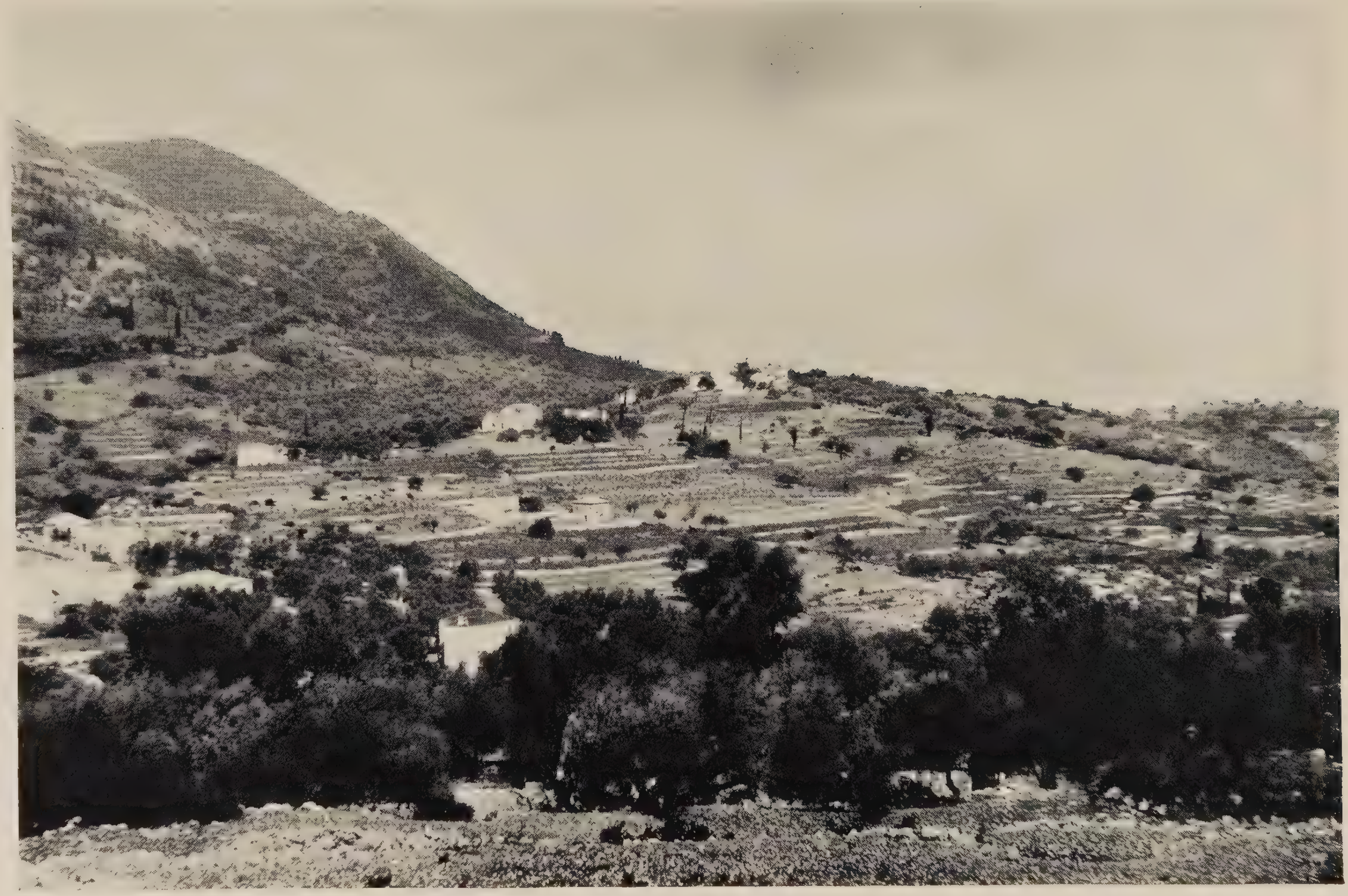
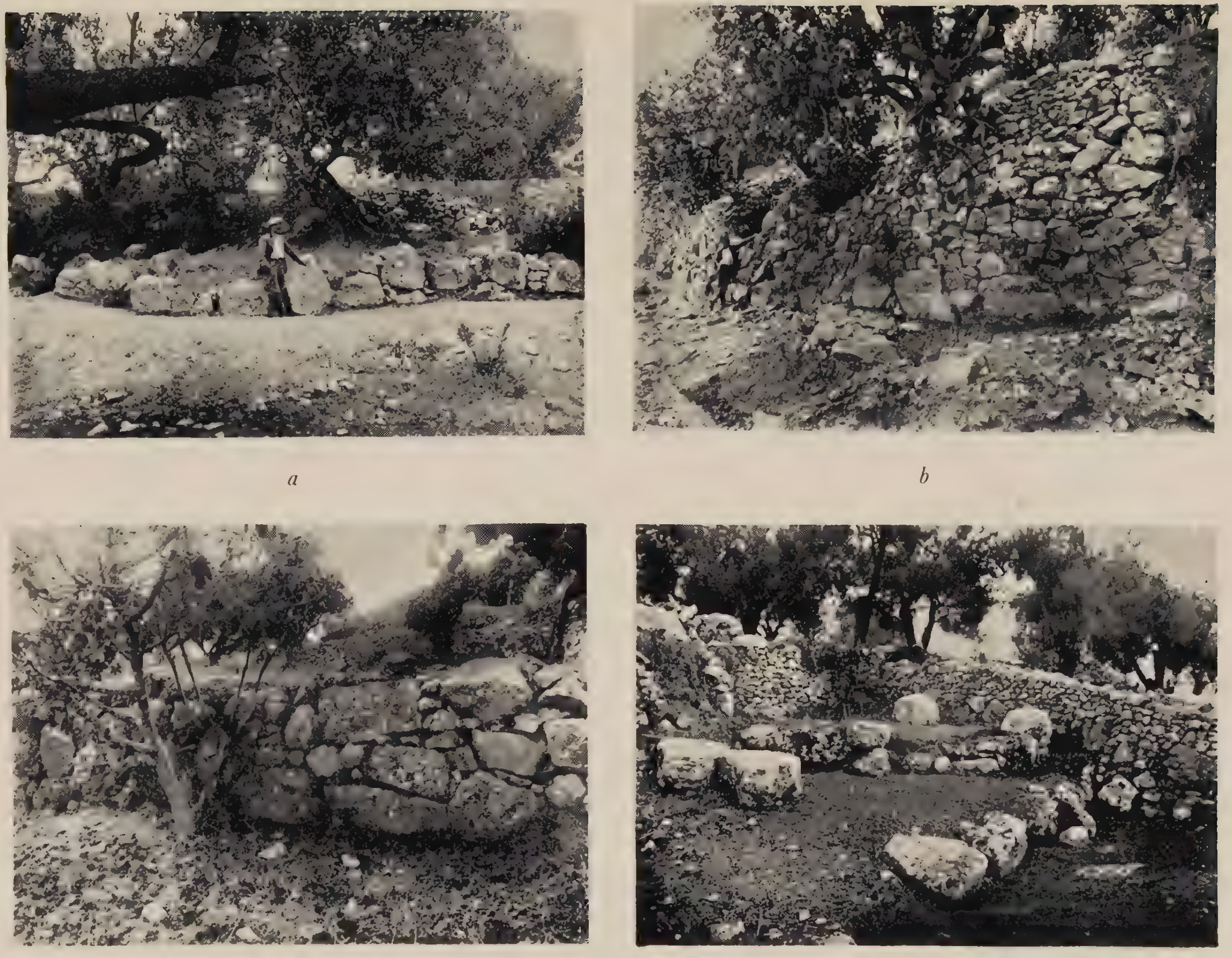
Excavations in Ithaca, II: Plan of Pelikáta, shewing Areas I–VI ⬚, and Trial Pits ▨. X = Remains of Circuit-Wall.

PLATE 2.



Excavations in Ithaca, II: Pelikáta from S.E.

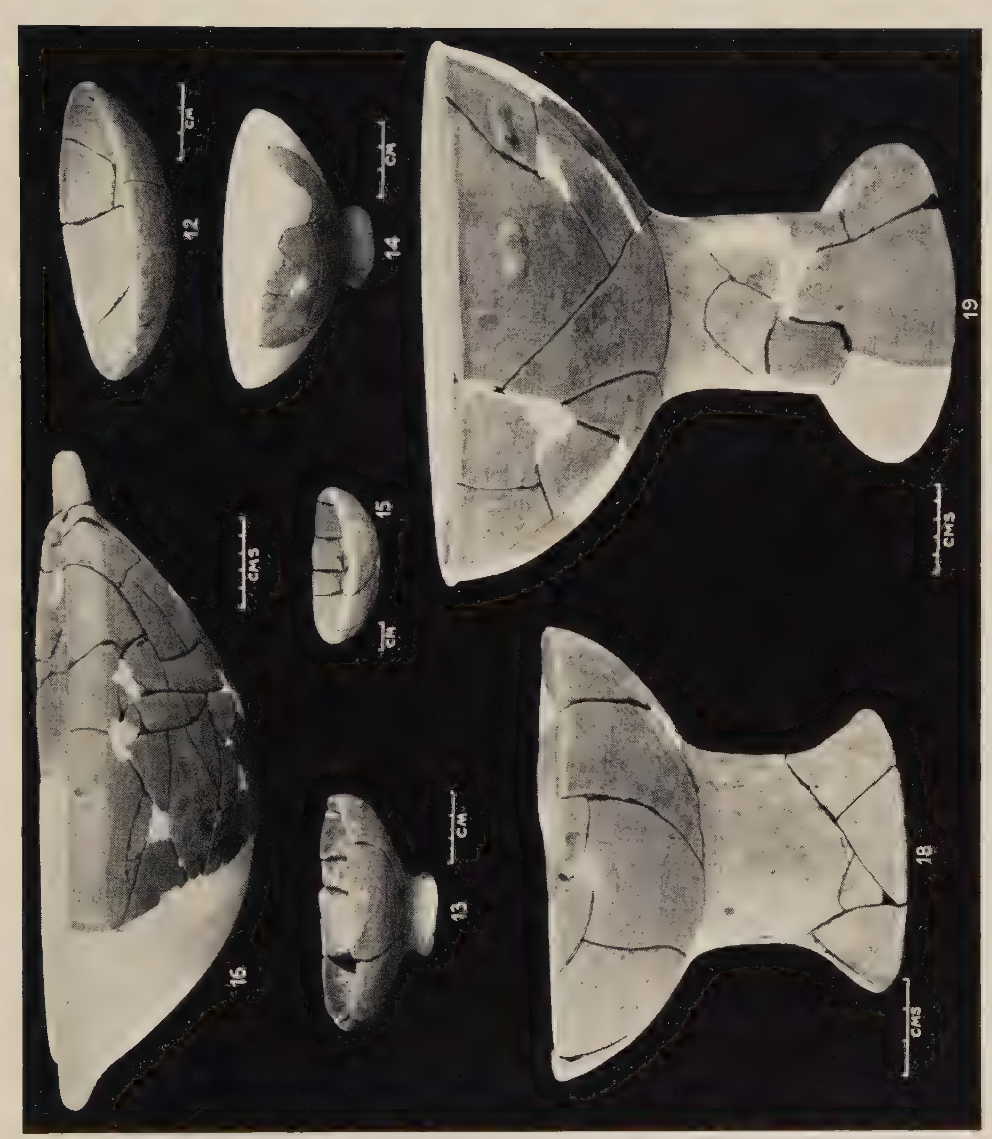
PLATE 3.



a b c d

Excavations in Ithaca, II: Pelikáta.

*a*, *c* and *d*, Remains of circuit wall; *b*, Area V, shewing foundation of ancient wall.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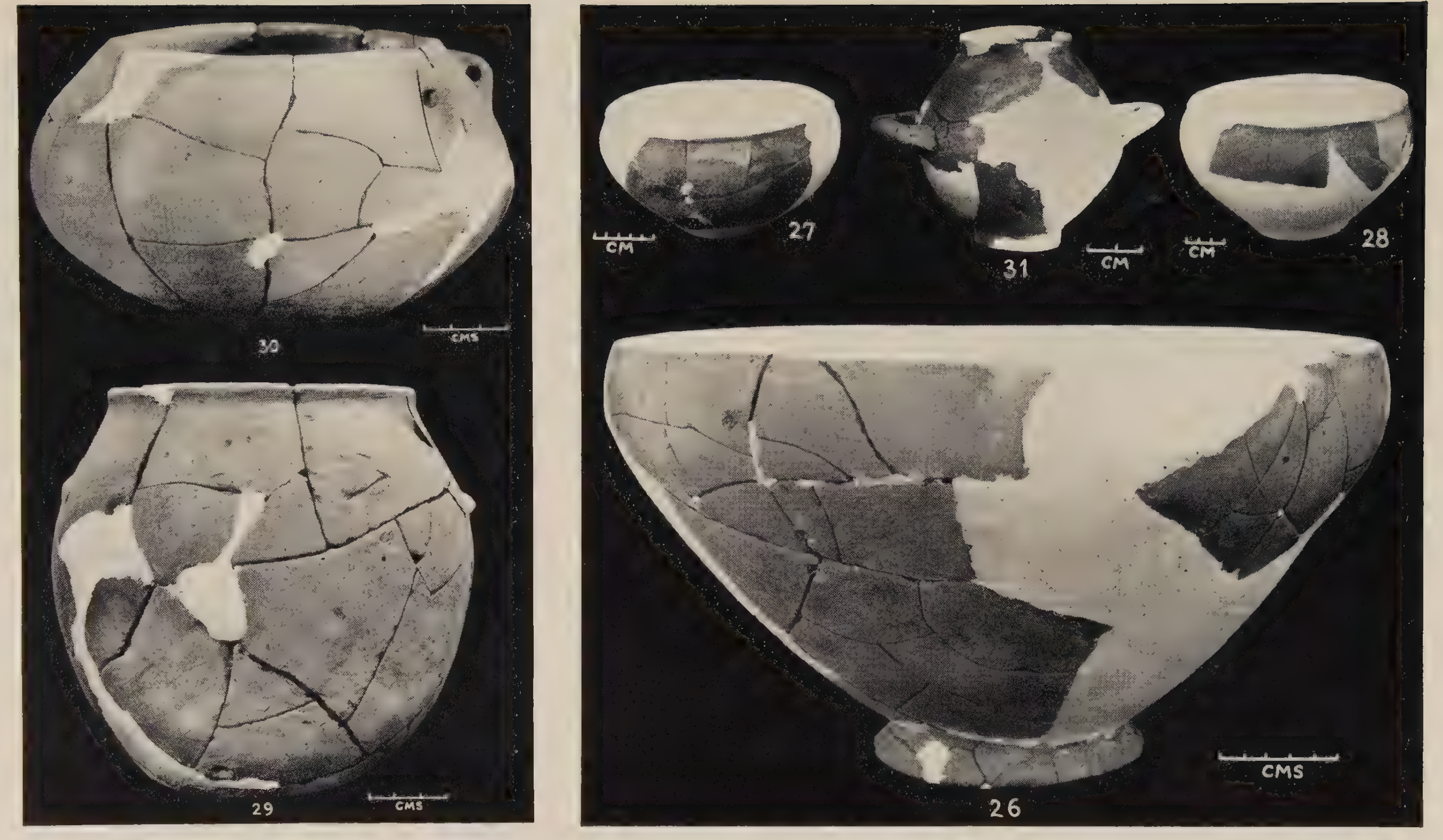
Excavations in Ithaca, II: Early Helladic Bowls.

PLATE 5.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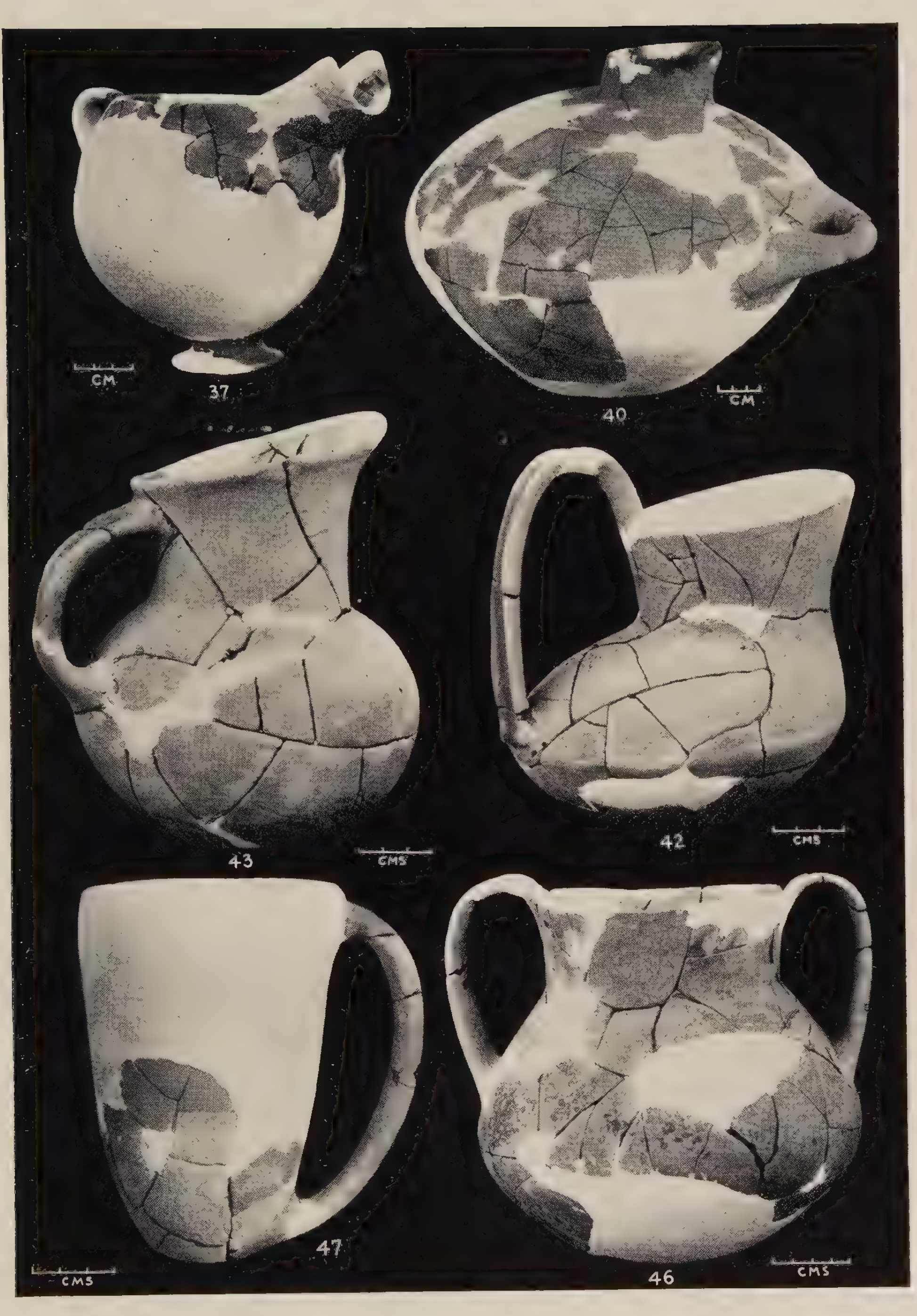
Excavations in Ithaca, II: Early Helladic.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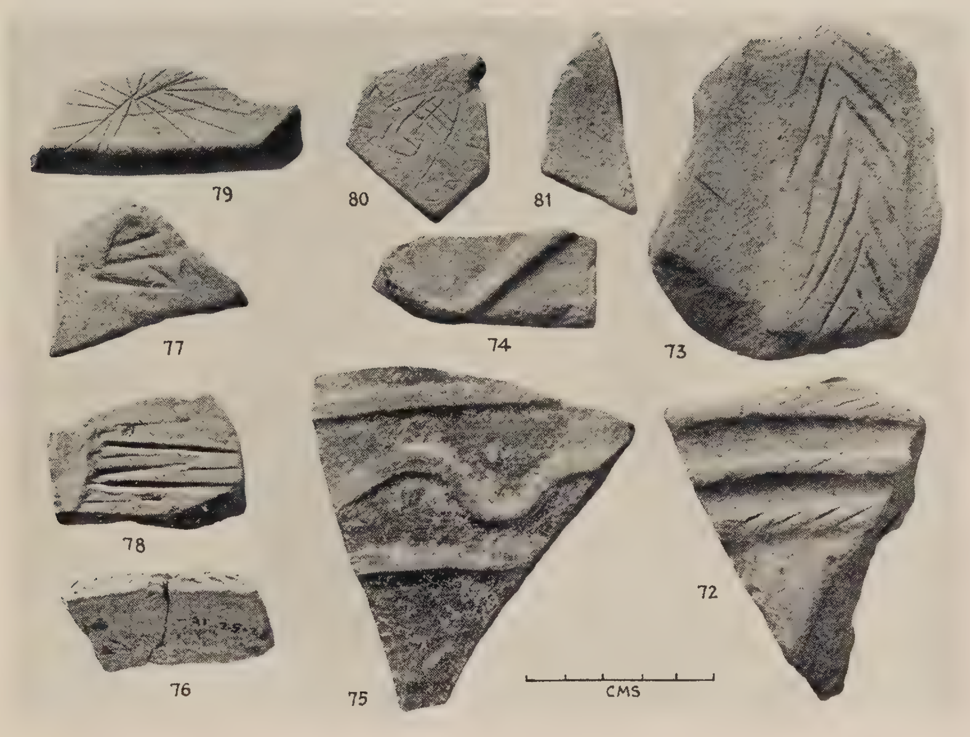
Excavations in Ithaca, II: Early Helladic.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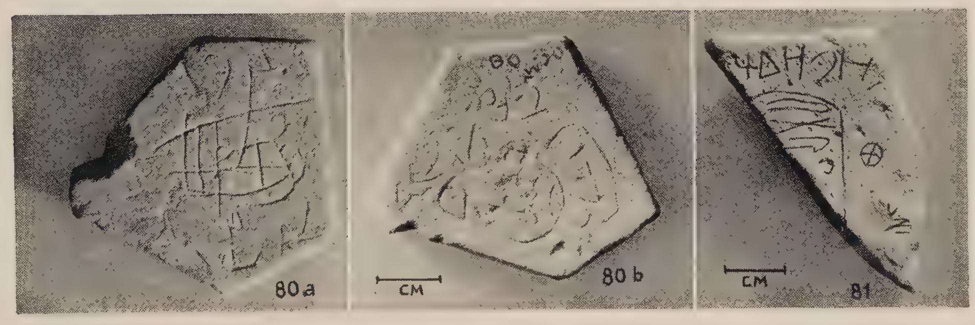
80 a
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80 b
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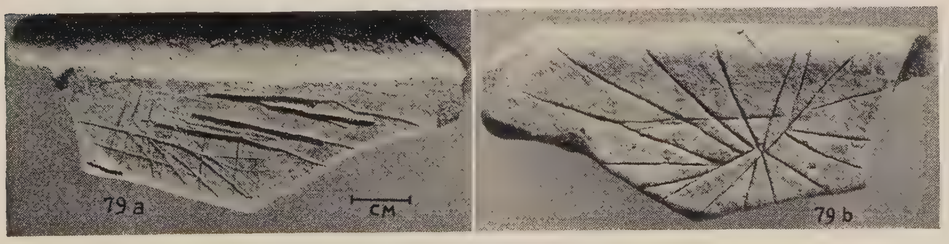
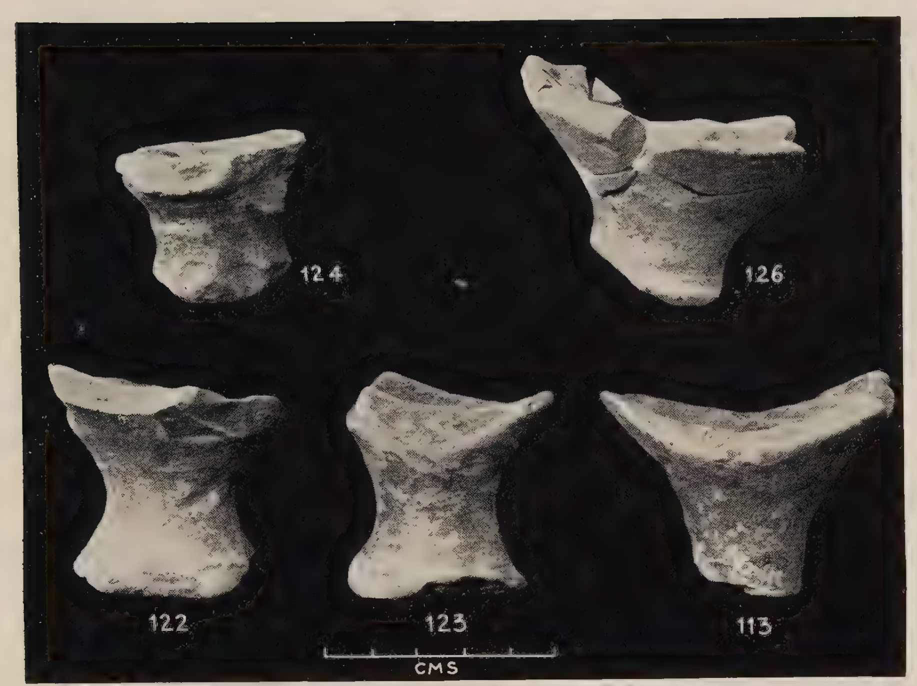
81



Excavations in Ithaca, II: EH, Inscribed, Incised or with Plastic Ornament.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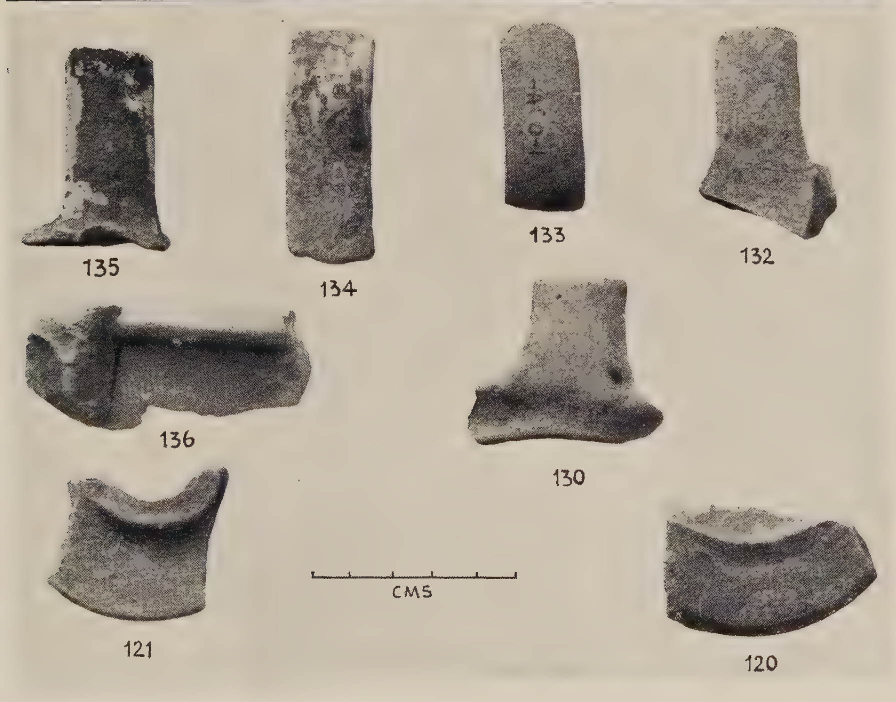
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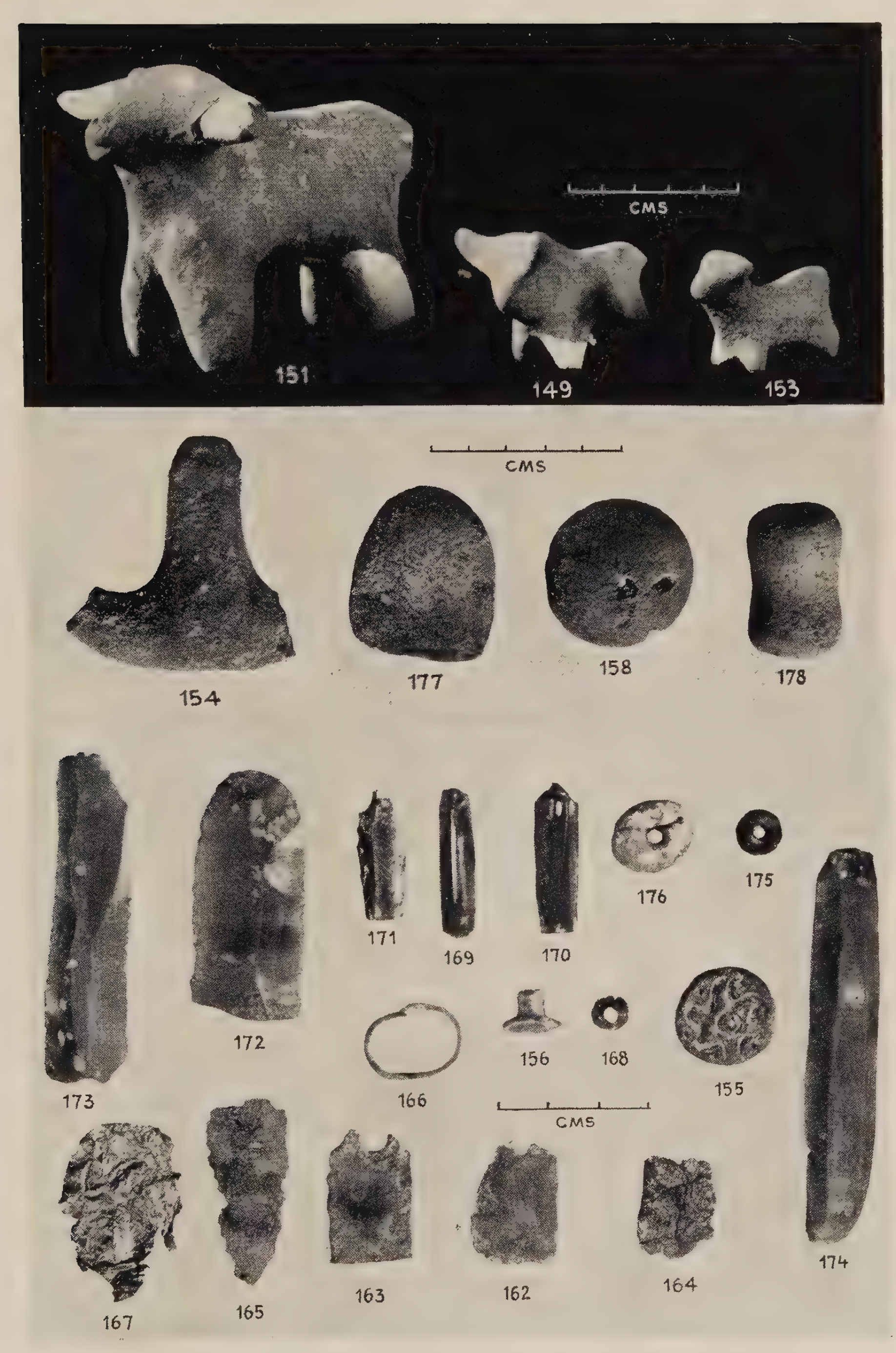
Excavations in Ithaca, II: Late Helladic III.

PLATE 9.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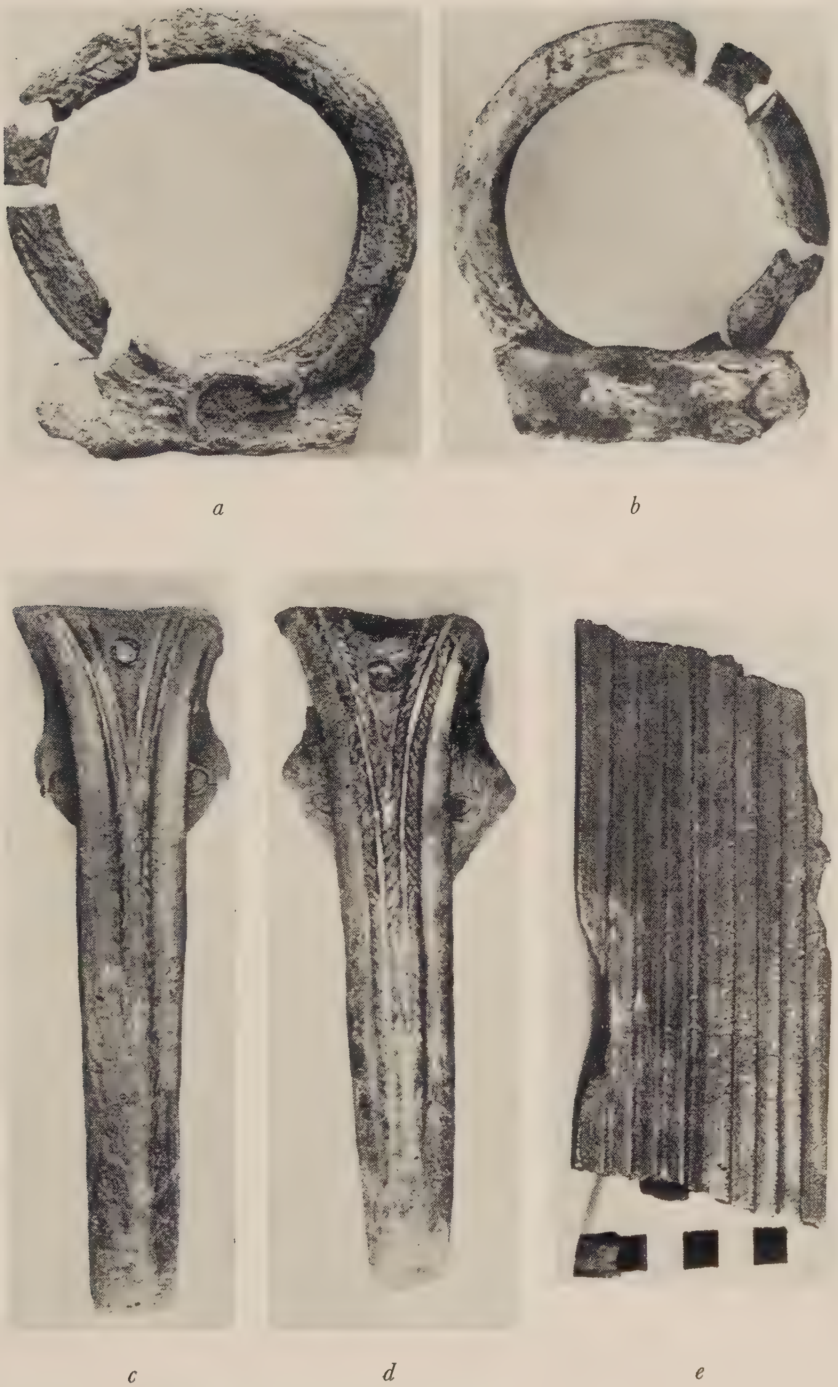
Excavations in Ithaca, II: Miscellaneous Objects.

PLATE 10.



a

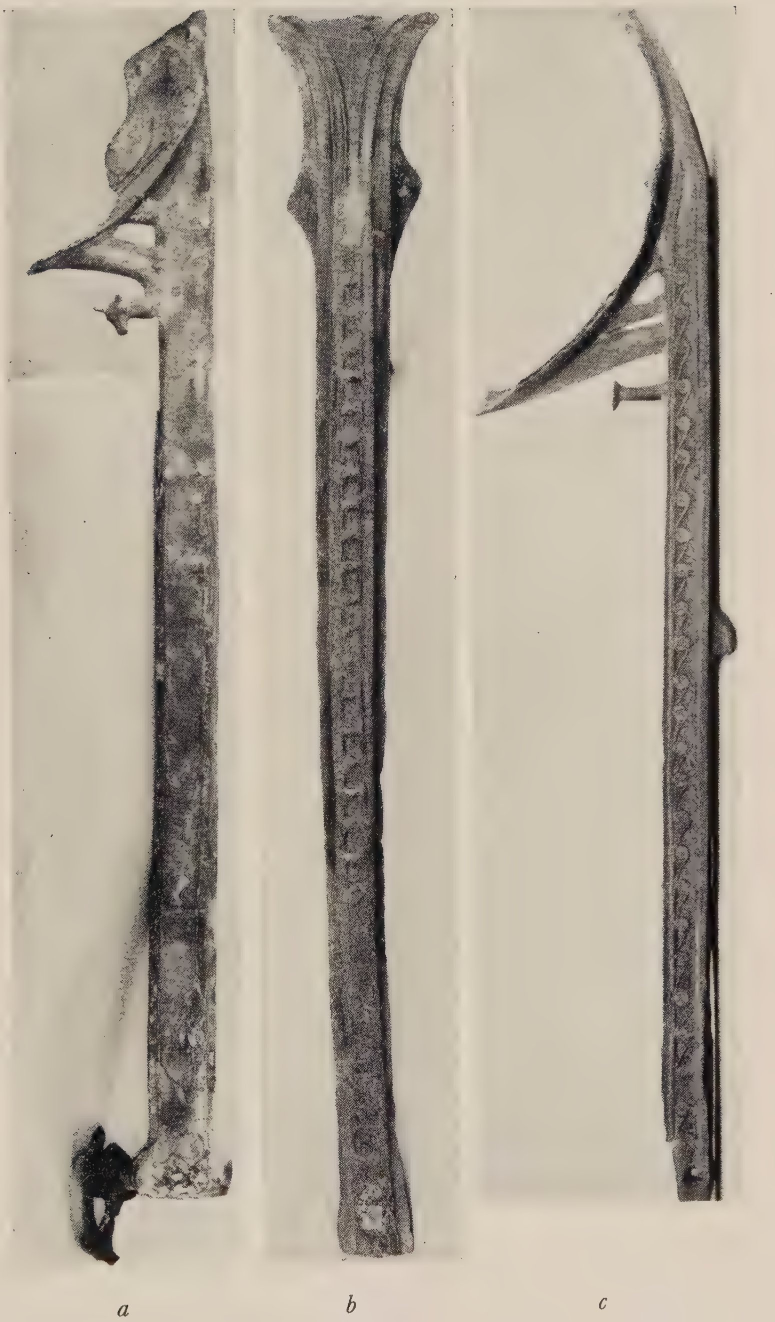
b

c

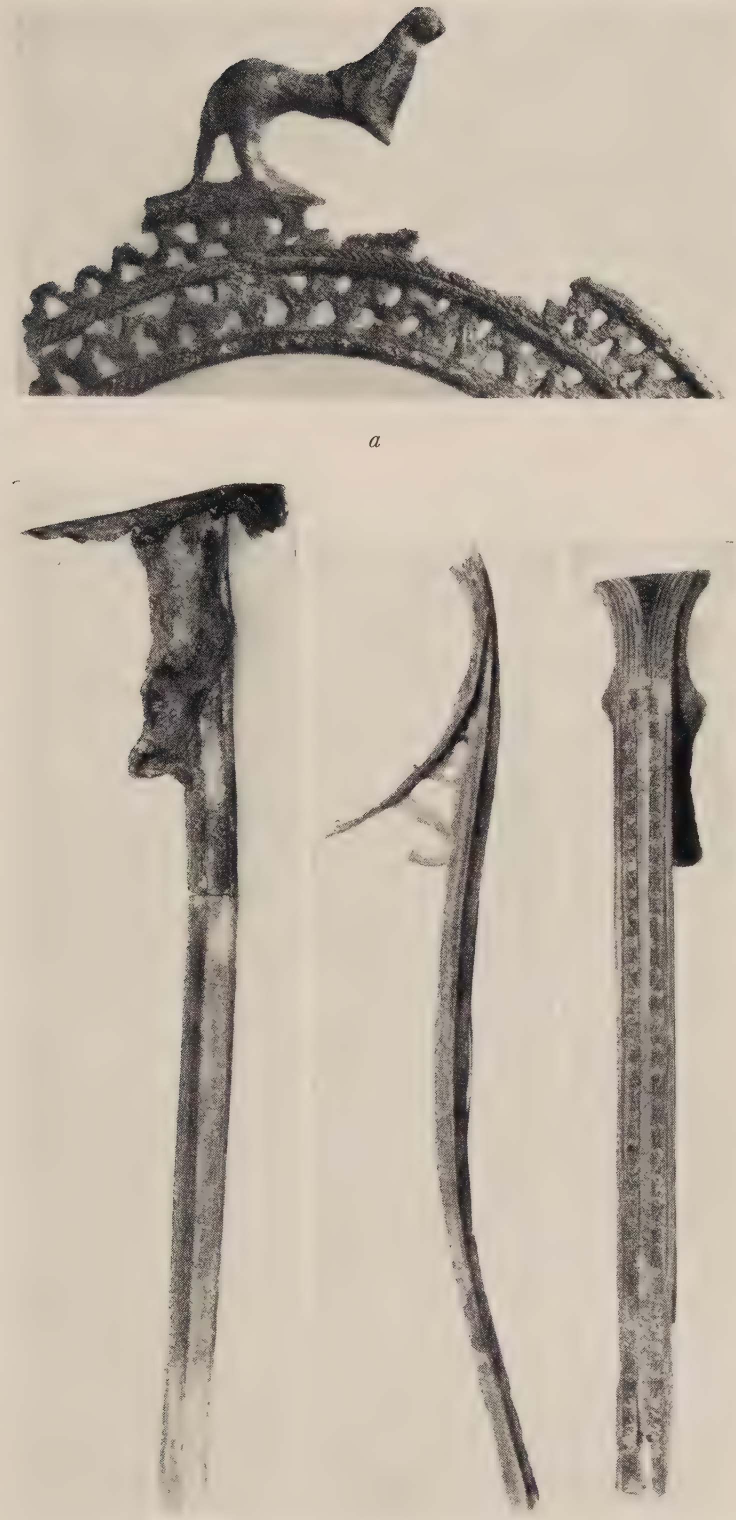
d

e

Excavations in Ithaca, III: Tripod-Fragments. *a*, *b* and *c*, No. 1; *d*, No. 2; *e*, No. 10. Scale, *a*, *b*, 6 : 7; *c*–*e*, 1 : 2.

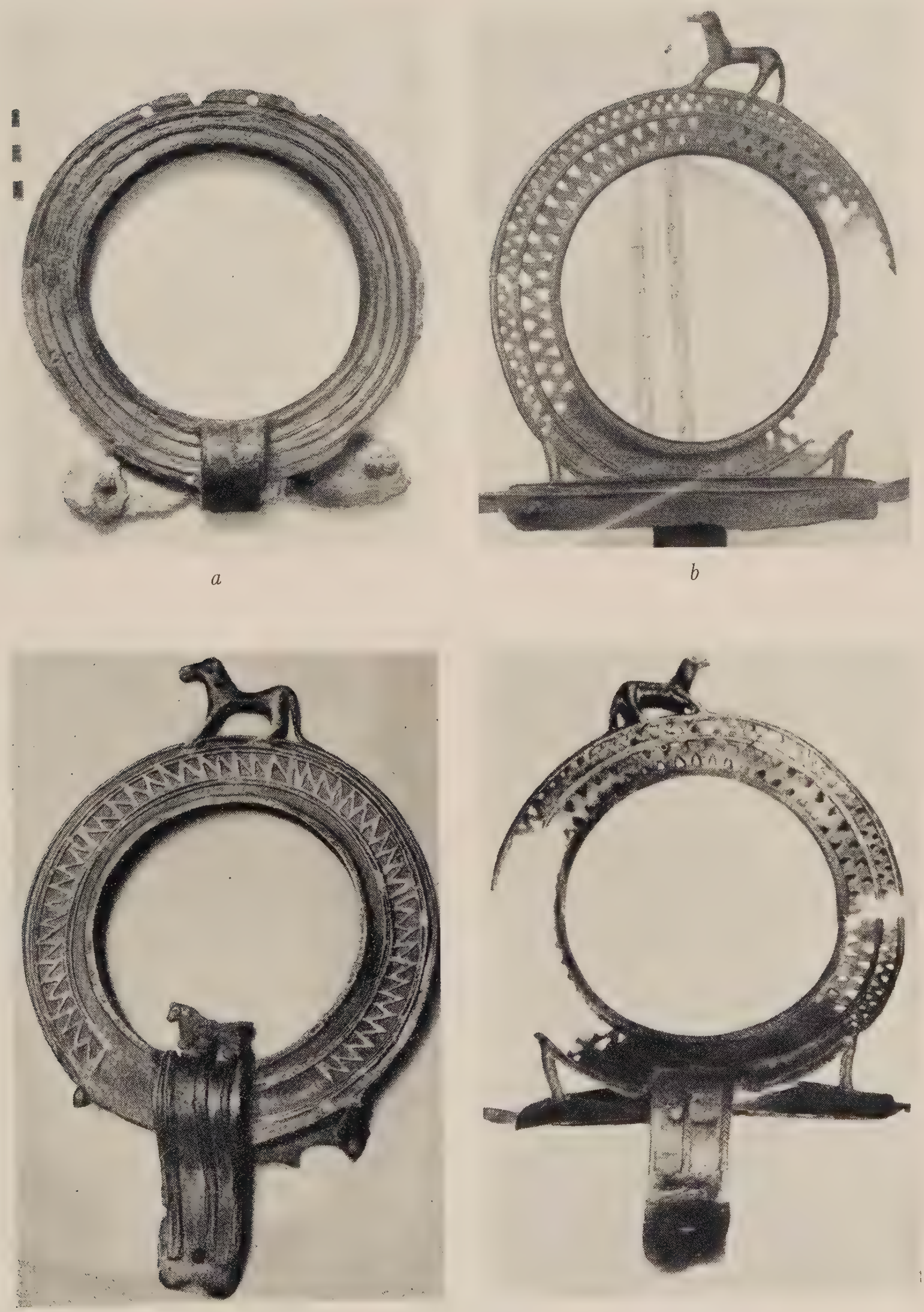


Excavations in Ithaca, III: Tripod-Fragments. *a*, No. 3; *b*, No. 7; *c*, No. 9. Scale, *a*, 1 : 6; *b*, *c*, 1 : 5.



Excavations in Ithaca, III: Tripod-Fragments. *a*, *c*, No. 7; *b*, No. 6; *d*, No. 9.
Scale, *a*, 3 : 4; *b*, 1 : 7; *c*, *d*, 1 : 8.

PLATE 13.

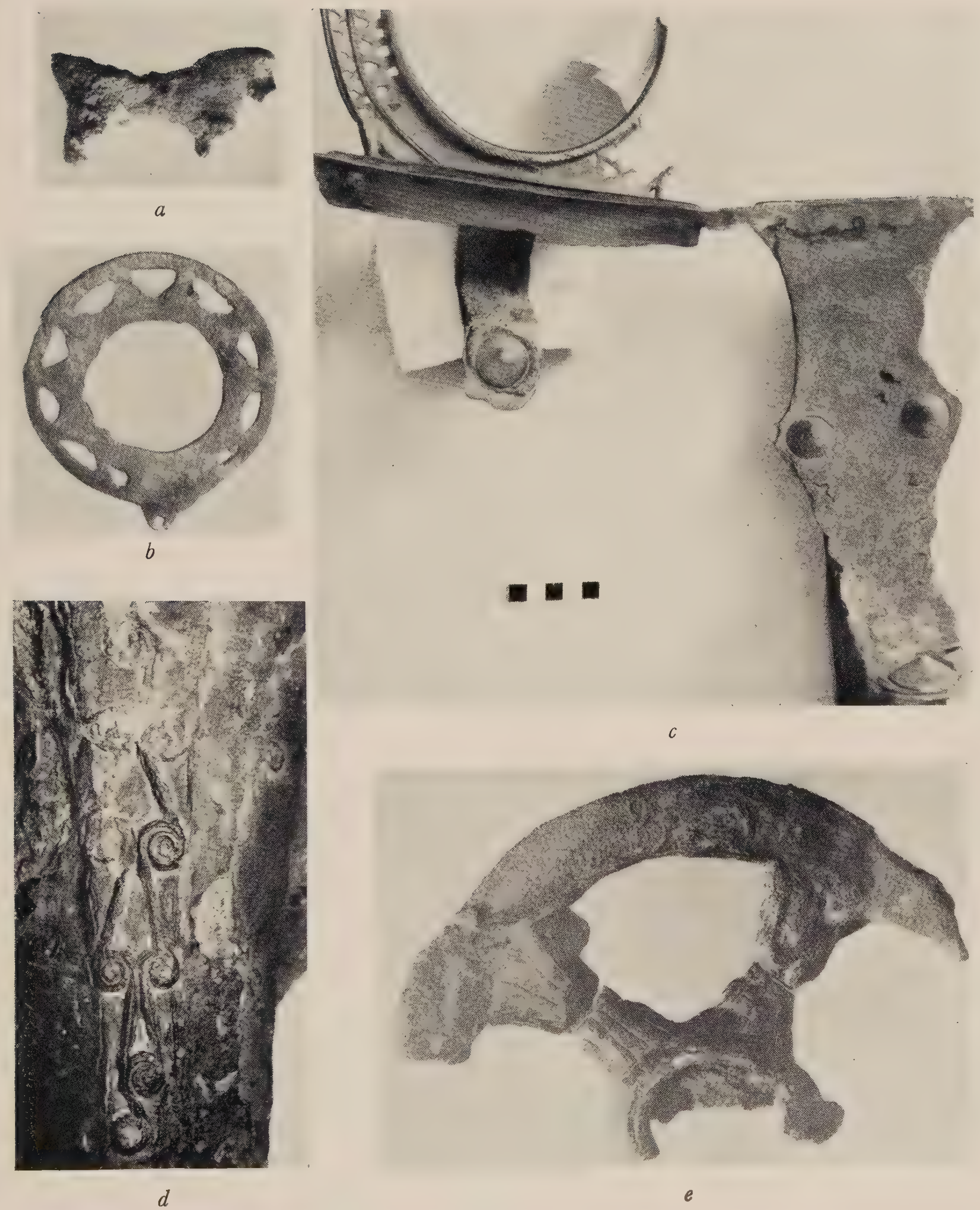


*a* *b*

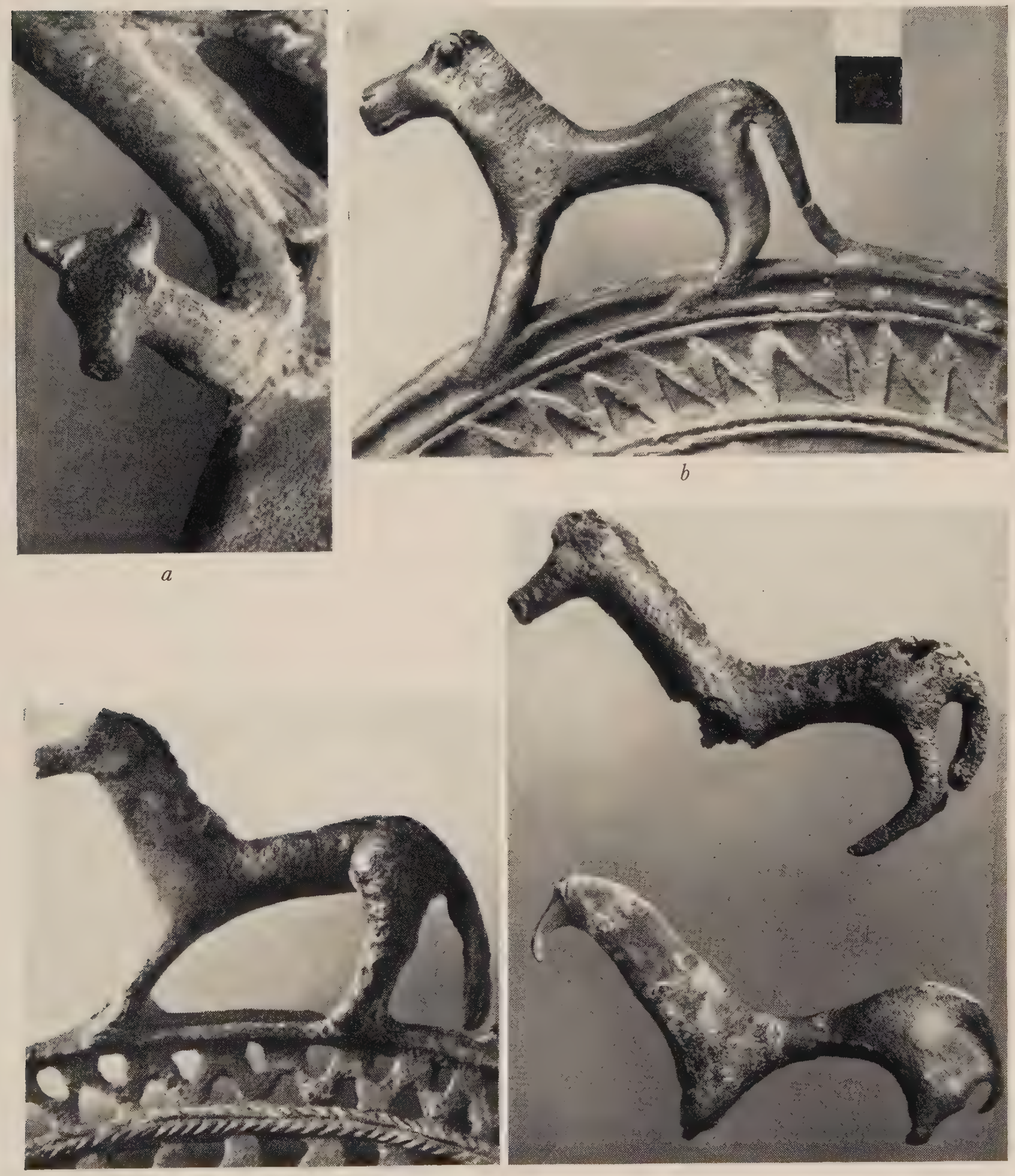
*c* *d*

Excavations in Ithaca, III: Tripod-Handles. *a*, No. 3; *b*, *d*, No. 9; *c*, No. 6. Scale, 1 : 4.

PLATE 14.



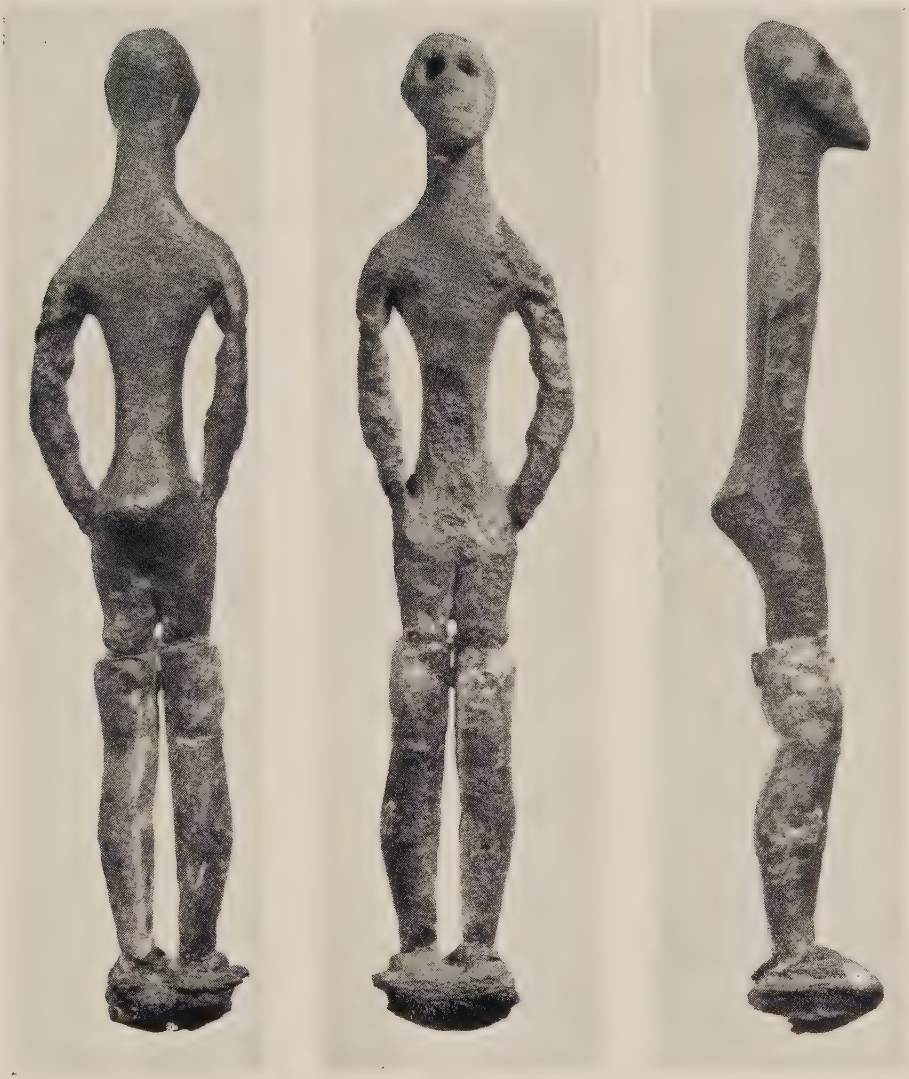
Excavations in Ithaca, III: Tripod-Fragments. *a*, No. 18; *b*, No. 19; *c*, No. 9; *d*, *e*, No. 3. Scale, *a*, 3 : 5; *b*, 1 : 2; *c*, 1 : 4; *d*, *e*, 1 : 1.



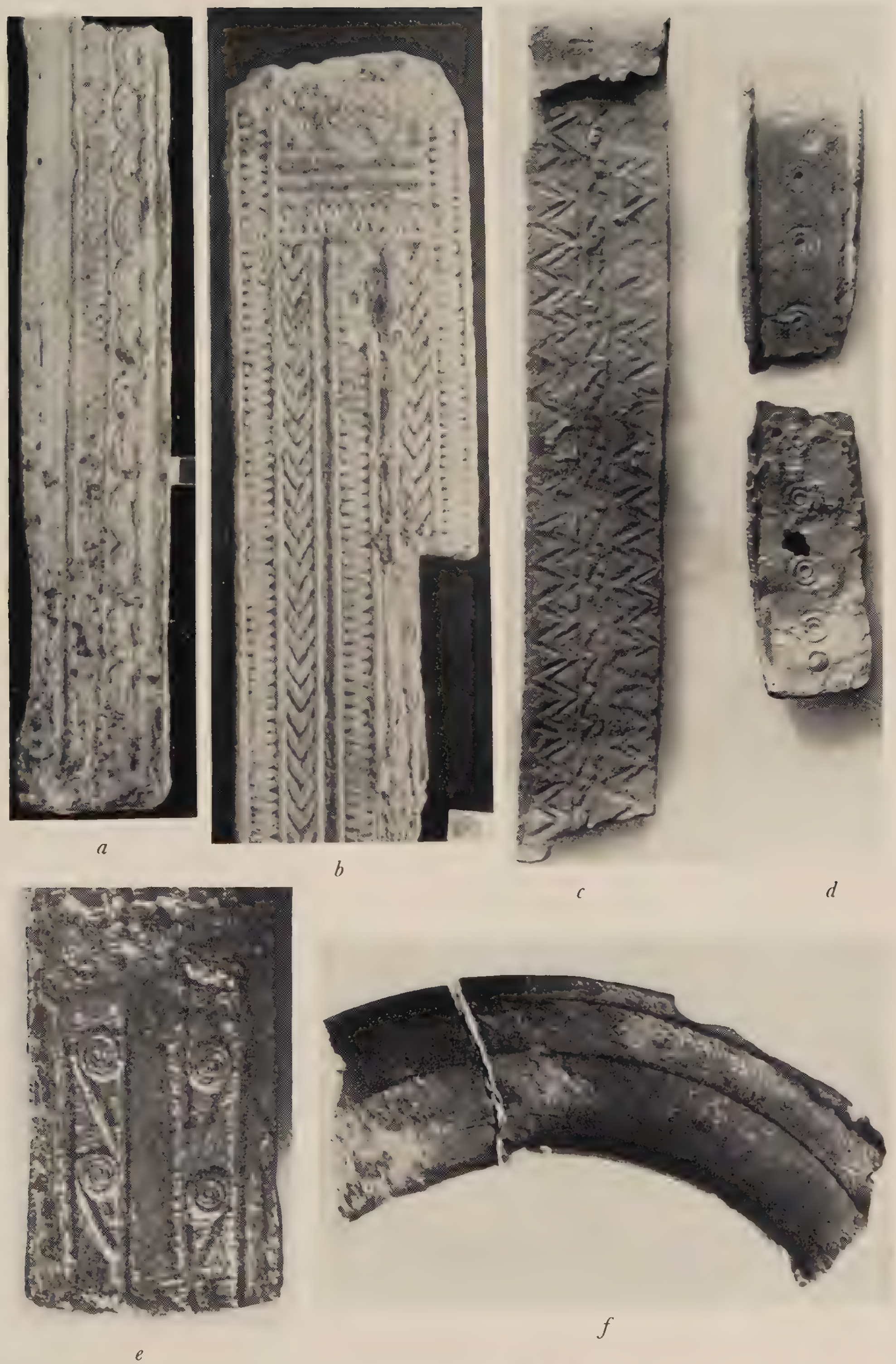
*a* *b* *c* *d*

Excavations in Ithaca, III: Animals from Tripods. *a*, No. 3; *b*, No. 6; *c*, No. 9; *d*, above No. 17, below No. 16. Scale, *a–c*, 1 : 1; *d*, 3 : 4.

PLATE 16.

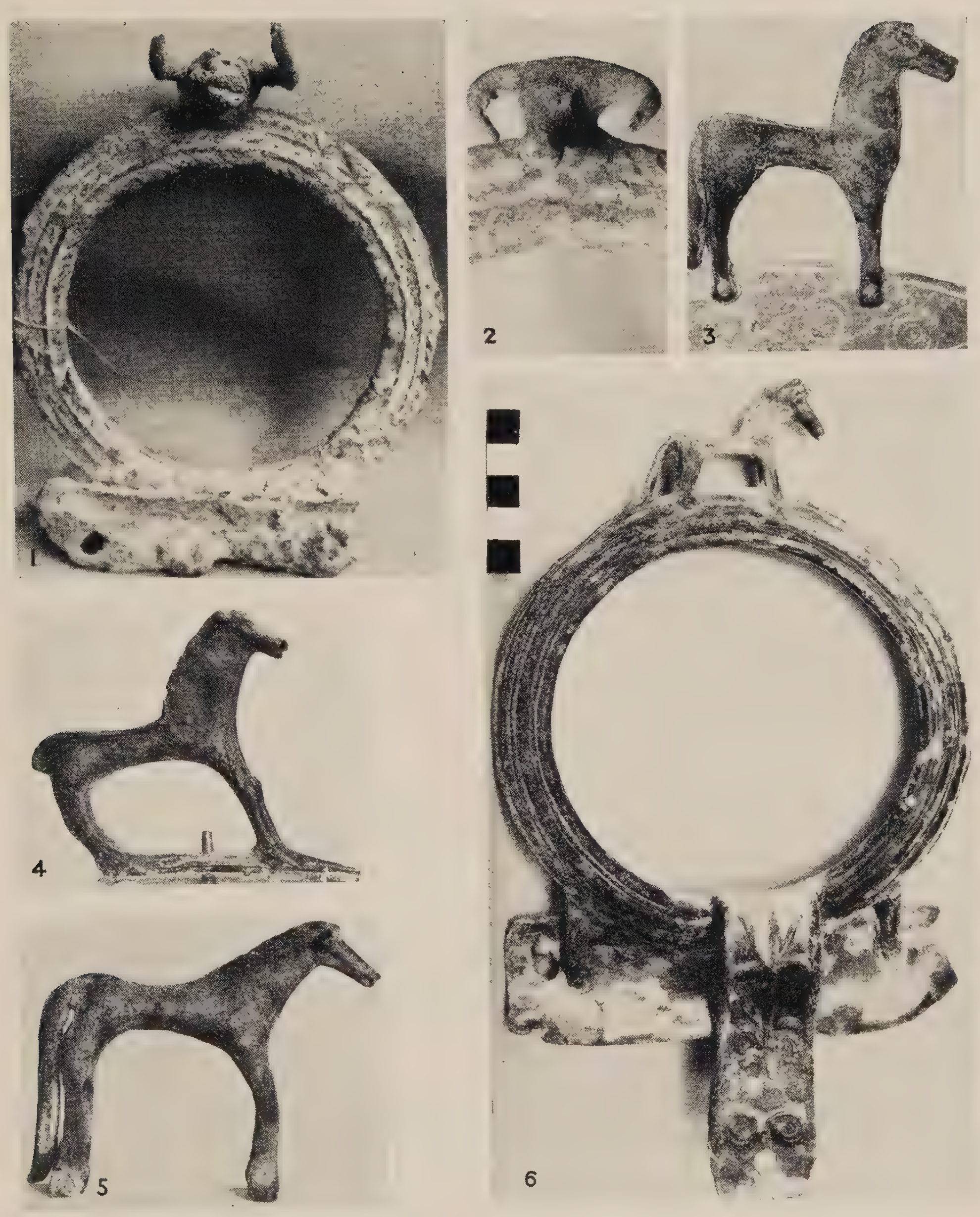


Excavations in Ithaca, III: Statuette, No. 15. Scale, 1 : 1.



Excavations in Ithaca, III: Tripod-Fragments. *a*, *b*, No. 11; *c*, No. 14; *d*, No. 13; *e*, No. 9; *f*, No. 12. Scale, *a*–*d*, *f*, 1 : 2; *e*, 2 : 3.

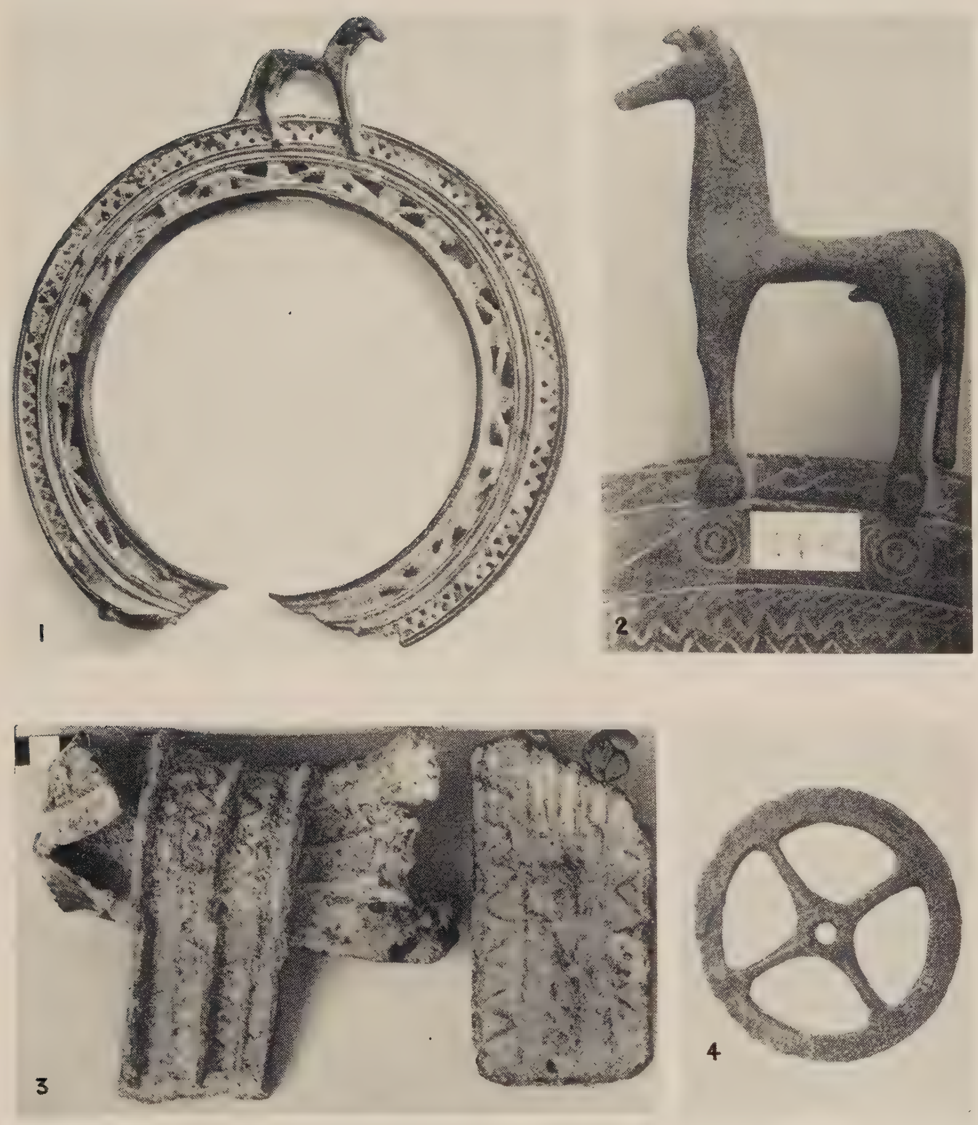
PLATE 18.



Evolution of the Tripod-Lebes: Figurines on Tripod-Handles, 4 and 5 in Delphi, the Rest in Olympia.

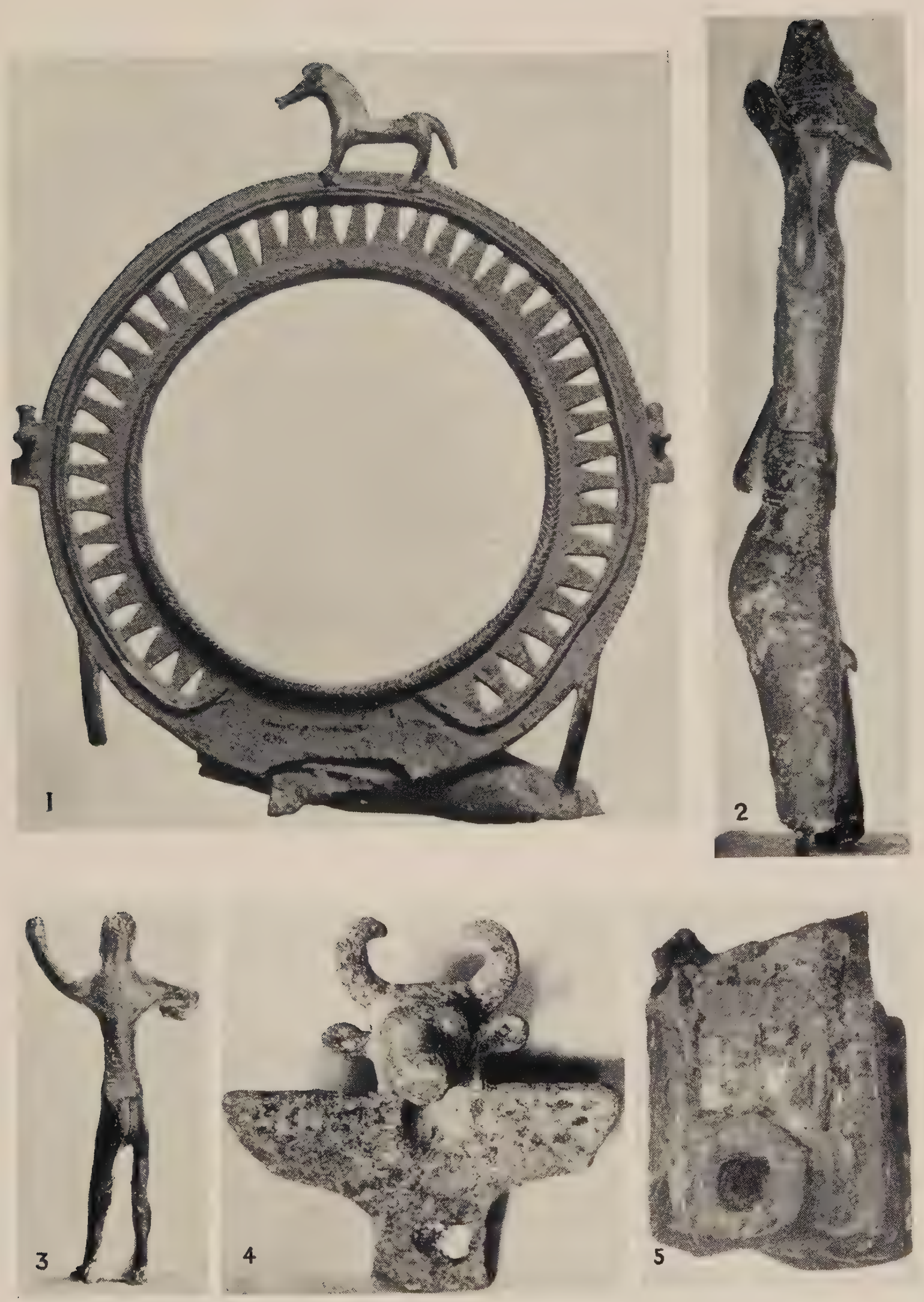
Scale: 1, 5 : 12; 2, 3, 5 : 6; 4, 5, 2 : 3; 6, 2 : 5.

PLATE 19.



Evolution of the Tripod-Lebes: Tripod-Fragments and a Wheel, 1 and 2 in Athens, 3 in Delphi, 4 in Crete.

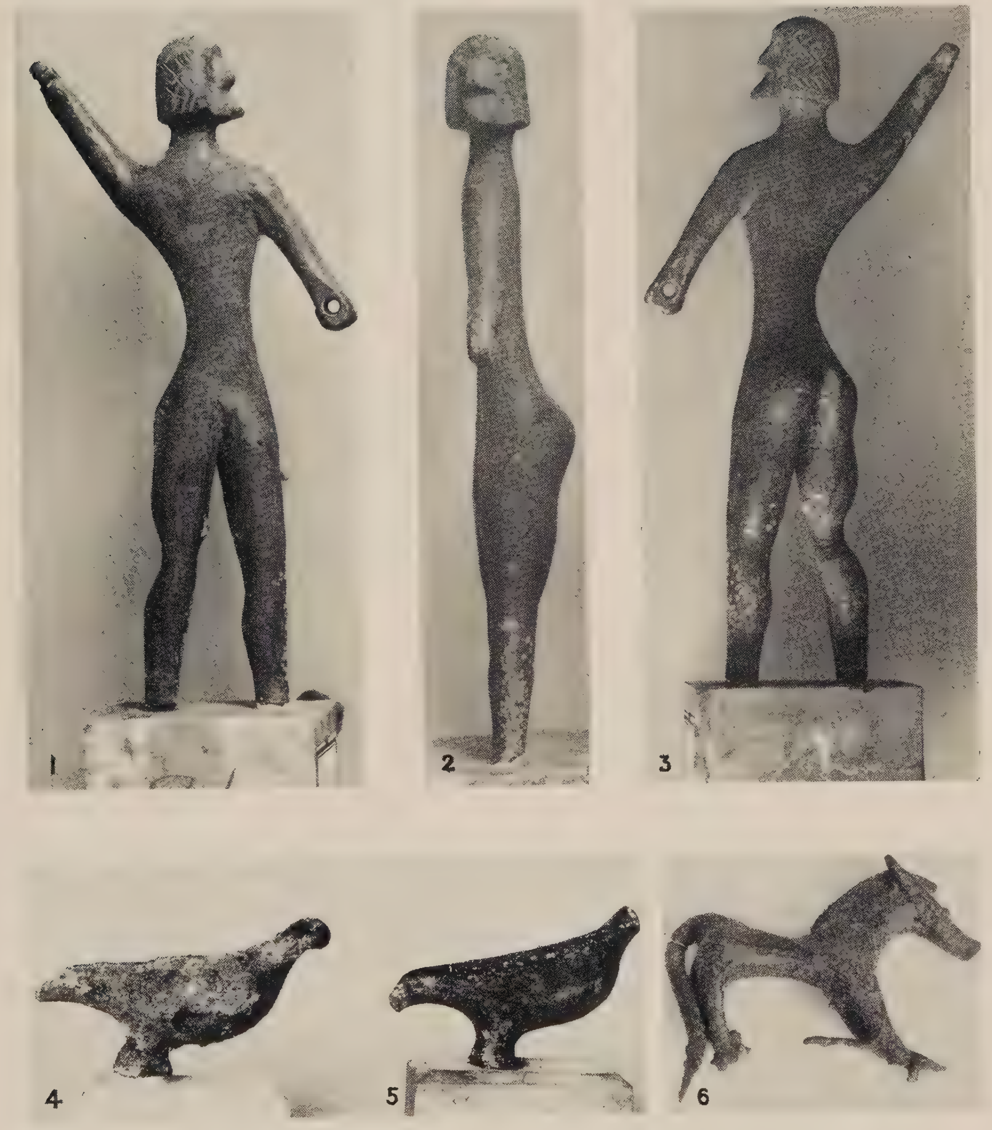
Scale: 1, 7 : 16; 2, 2 : 3; 3, 2 : 5; 4, 7 : 12.



Evolution of the Tripod-Lebes: 1–3 and 5 Tripod-Fragments; 1 in Oxford; 2, 3 in Delphi; 5 in Crete. 4 Cauldron Attachment in Olympia.

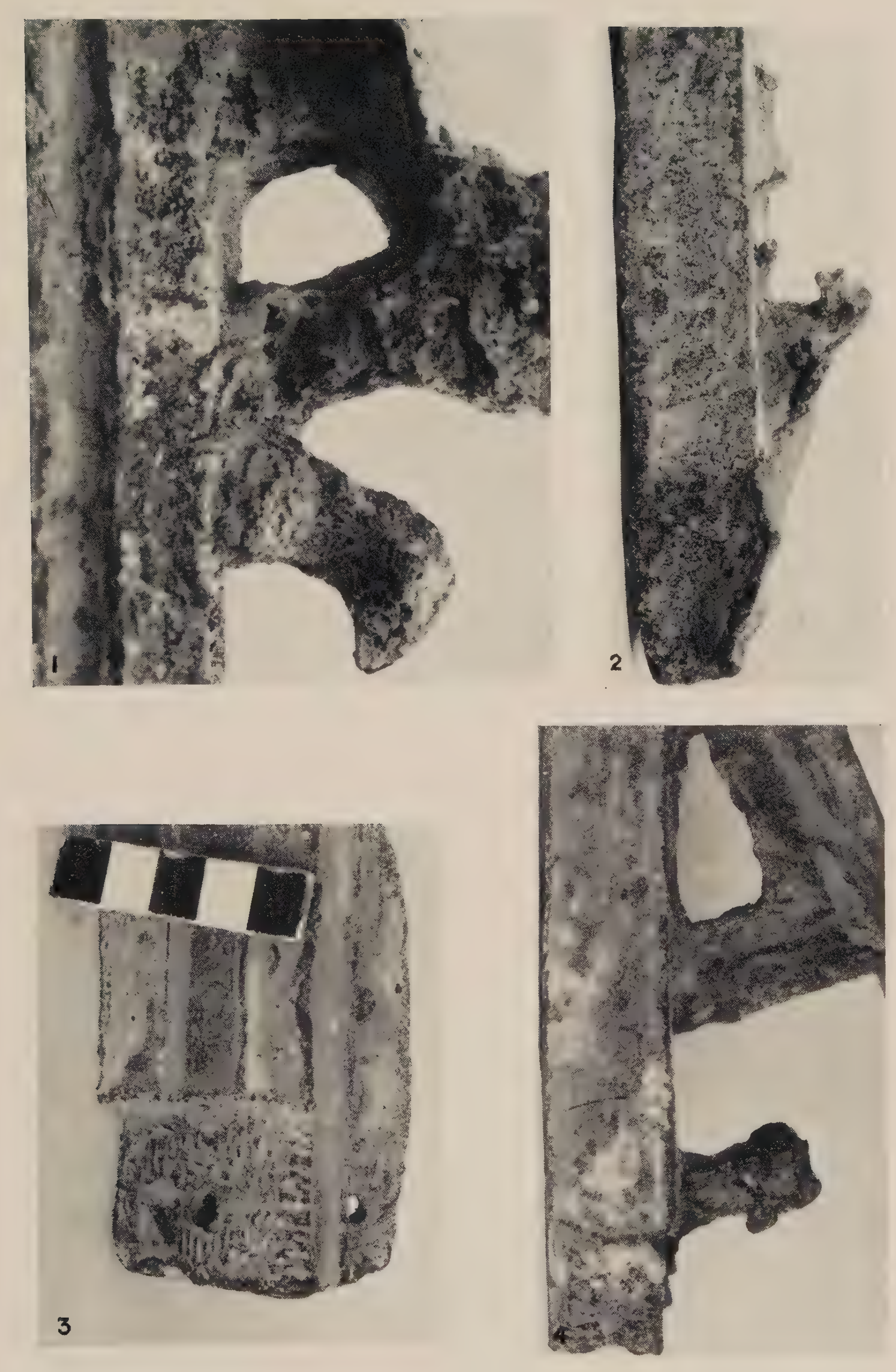
Scale: 1, 4 : 9; 2, 4 : 7; 3, 8 : 11; 4, 1 : 2; 5, 5 : 7.

PLATE 21.



Evolution of the Tripod-Lebes: Figurines on Tripod-Handles; 1–3 from Dodona in Athens, 4 and 5 in Delphi; 6 in Crete.
Scale: 1–3, 7 : 10; 4–6, 1 : 2.

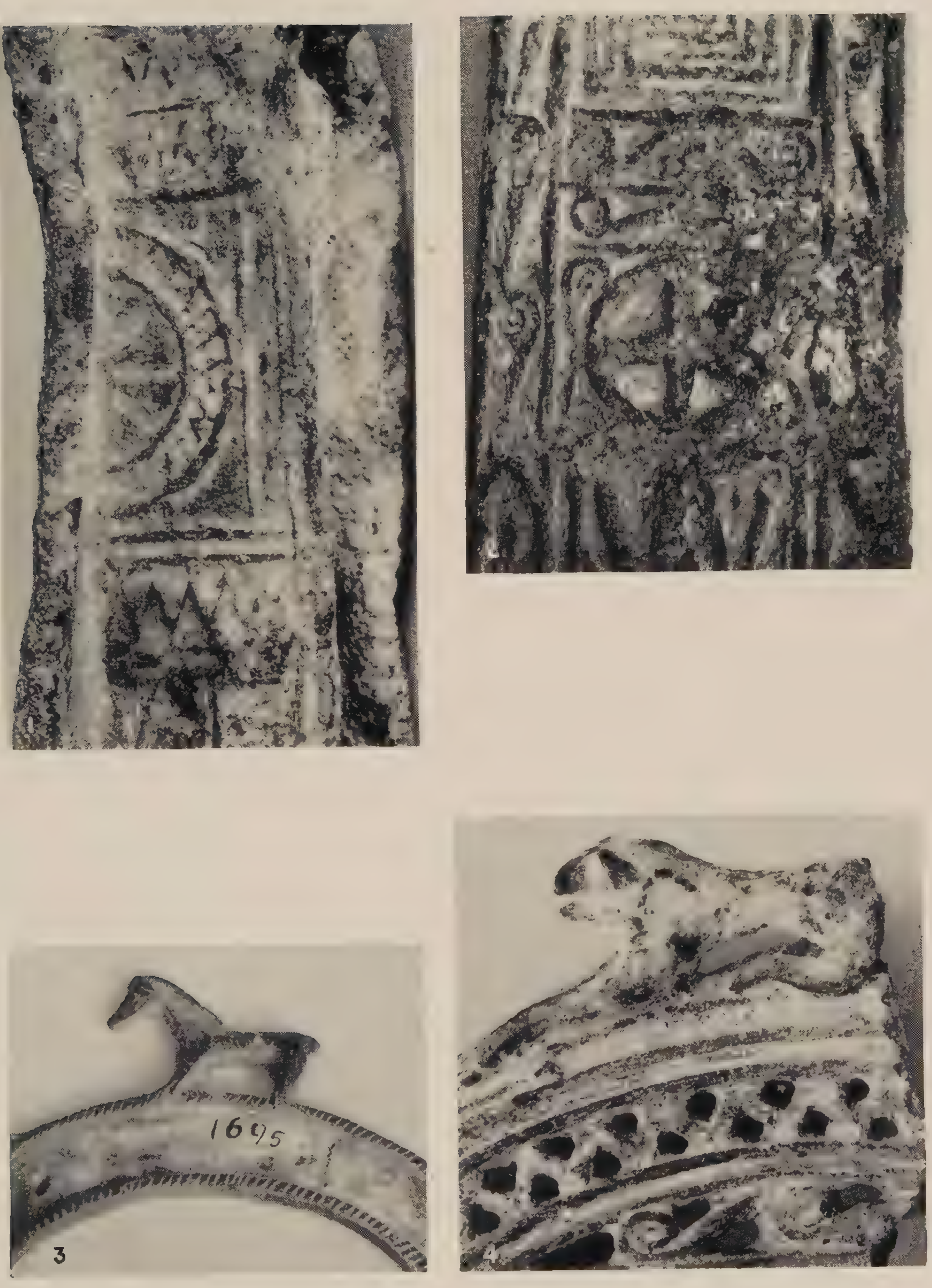
PLATE 22.



Evolution of the Tripod-Lebes: 1, 2 and 4 Figurines on Tripod-Legs, 1 No. 4; 2 No. 5; 4 No. 8; 3, Detail of a Tripod-Leg; 1 and 2 in Olympia, 3 and 4 in Crete.

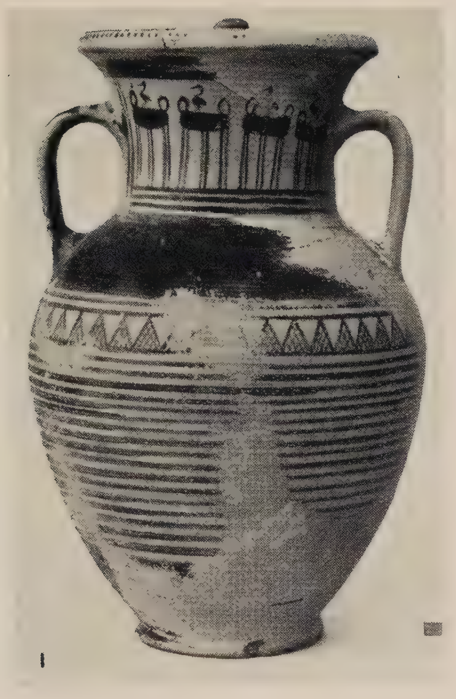
Scale: 1, 2, 4, 1 : 1.

PLATE 24.



Evolution of the Tripod-Lebes: Details of Tripod-Legs and Handles; 1 and 2 in Delphi; 3 in Candia; 4 in Olympia.
Scale: 1 and 2, 1 : 1; 3, 7 : 10; 4, 9 : 10.

PLATE 25.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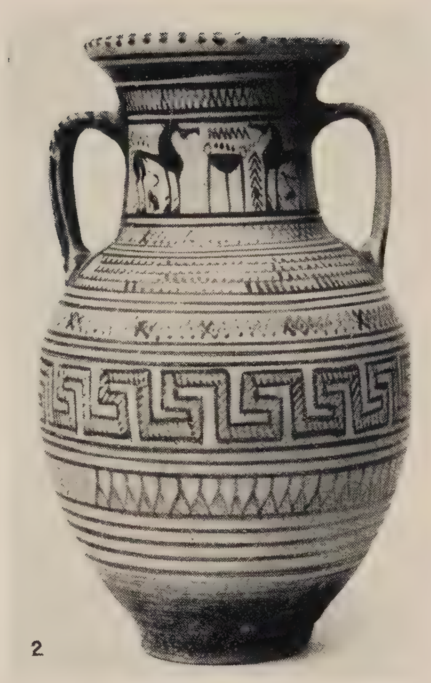
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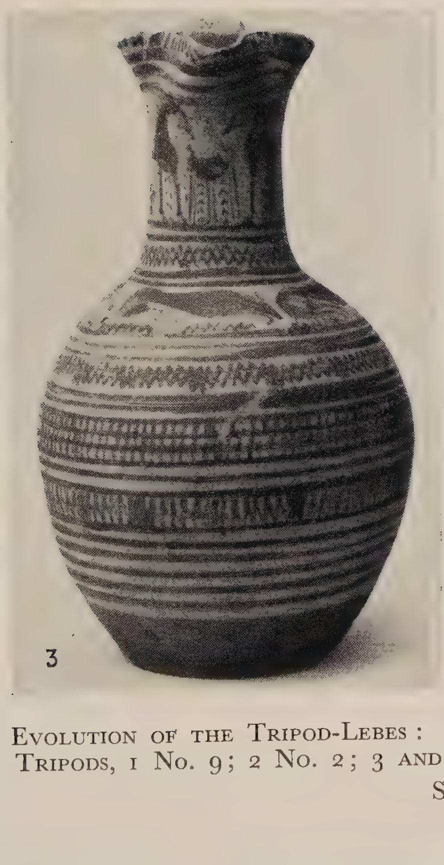
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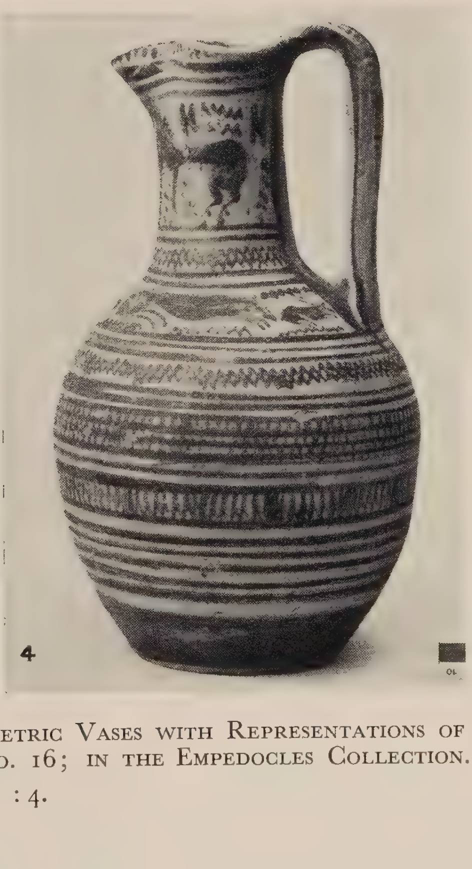
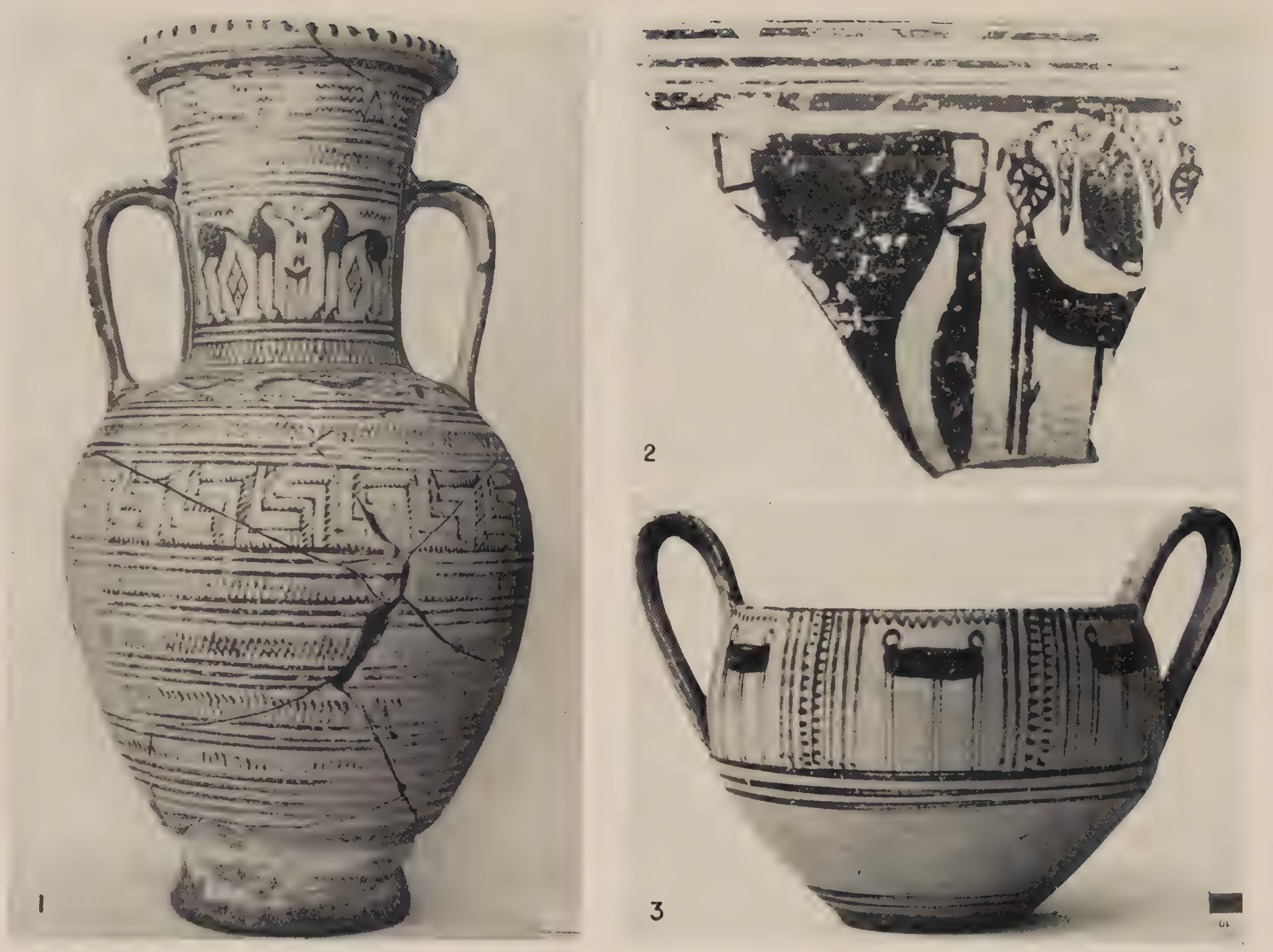

4

Evolution of the Tripod-Lebes: Geometric Vases with Representations of Tripods, 1 No. 9; 2 No. 2; 3 and 4 No. 16; in the Empedocles Collection.

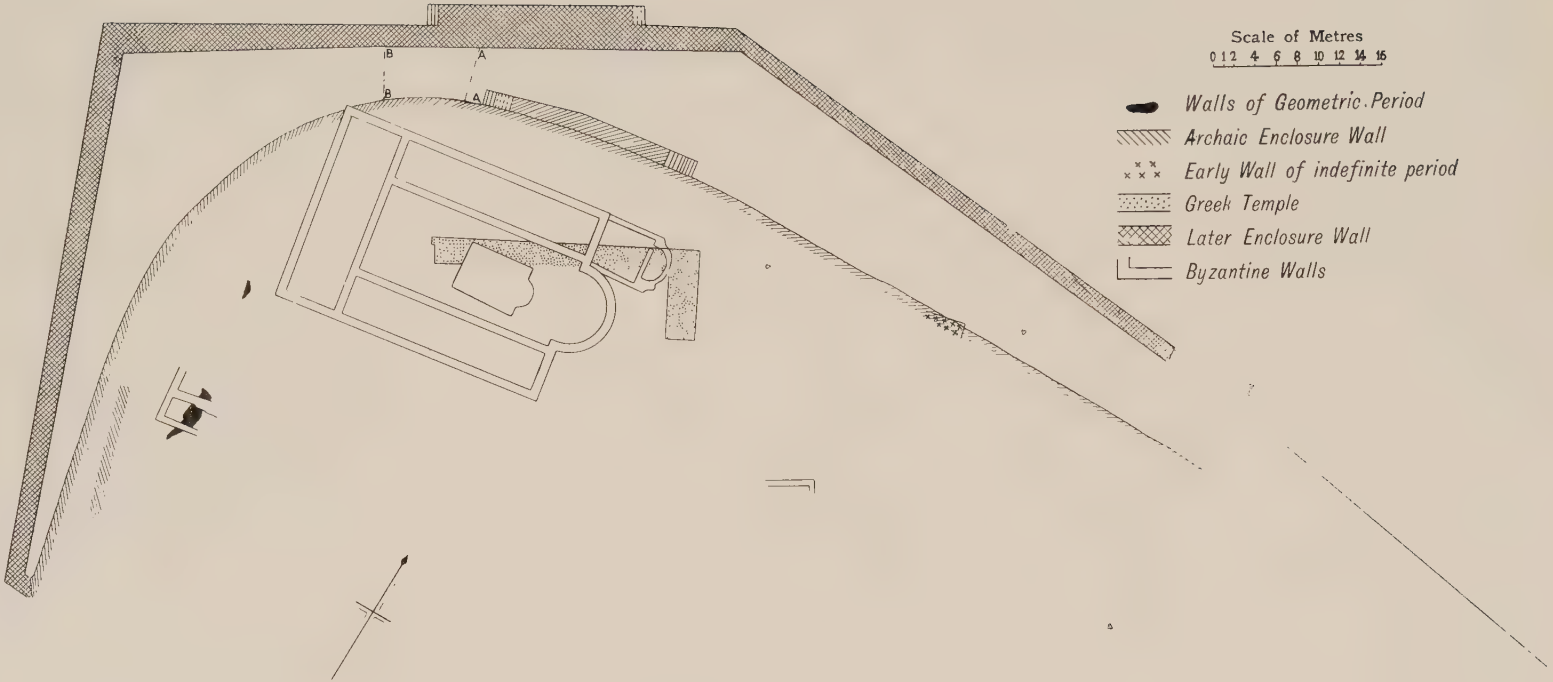
Scale 1 : 4.

PLATE 26.

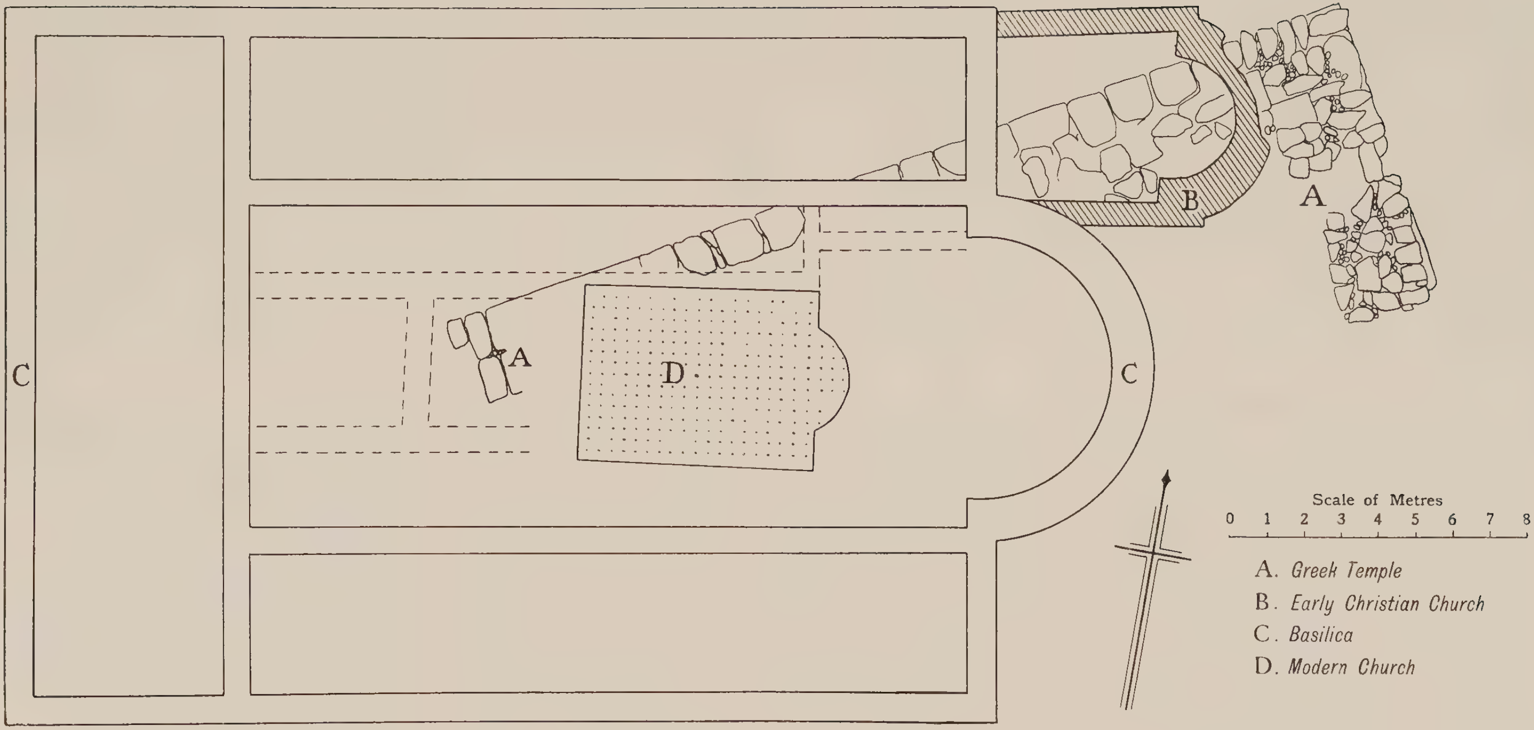


Evolution of the Tripod-Lebes: Vases with Representations of Tripods, 1 No. 15; 2 No. 13; 3 No. 10; Nos. 1 and 3 in Athens, 2 from the Argive Heraeum.
Scale: 1, 1 : 2; 2, 4 : 5; 3, 3 : 5.

PLATE 27.

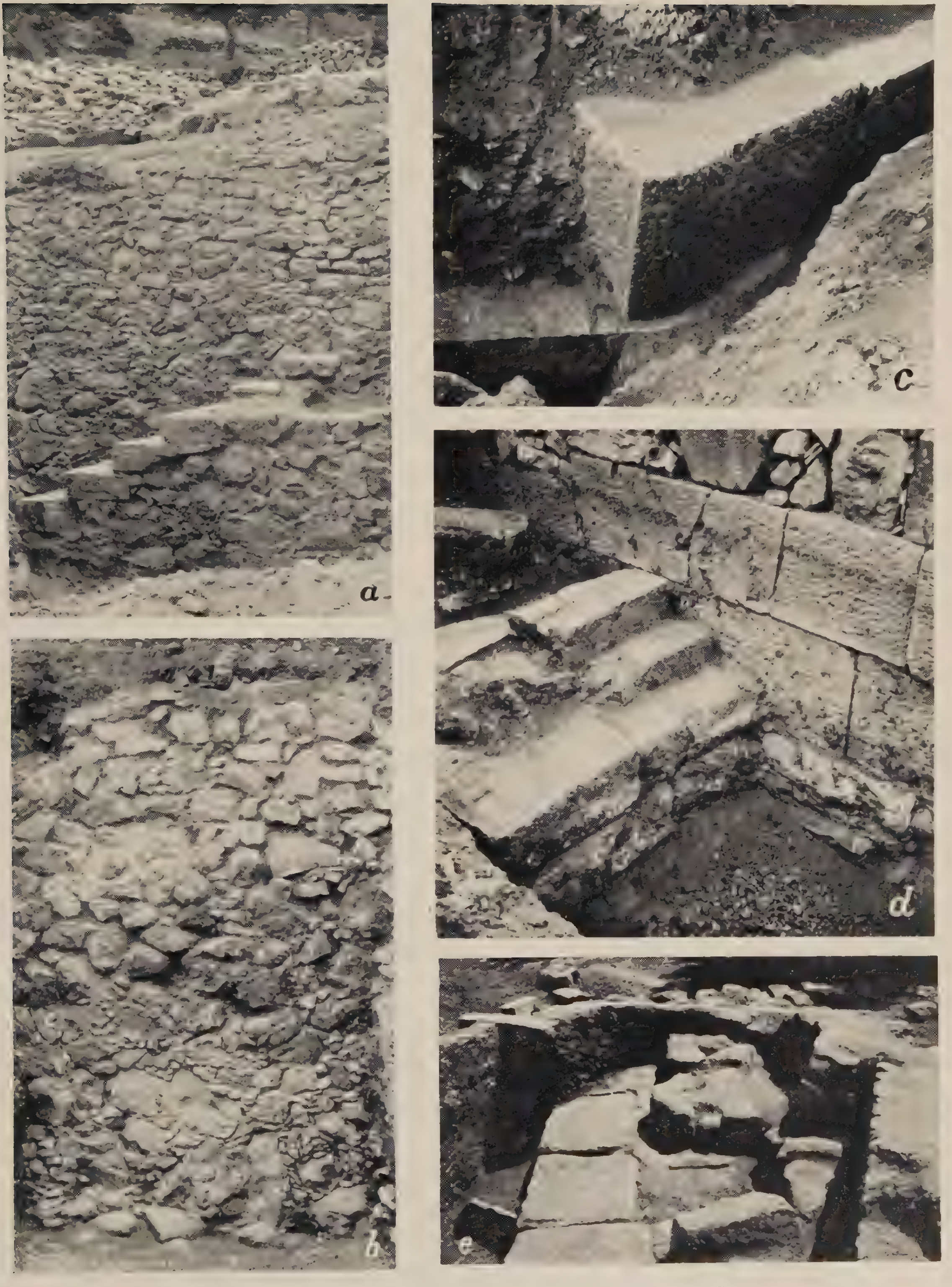

Scale of Metres
0 1 2 4 6 8 10 12 14 16
Walls of Geometric Period
Archaic Enclosure Wall
Early Wall of indefinite period
Greek Temple
Later Enclosure Wall
Byzantine Walls
A
A
B
B

Kato Phaná: Plan of Site.


A
B
A
D
C
C
Scale of Metres
0 1 2 3 4 5 6 7 8
A. Greek Temple
B. Early Christian Church
C. Basilica
D. Modern Church

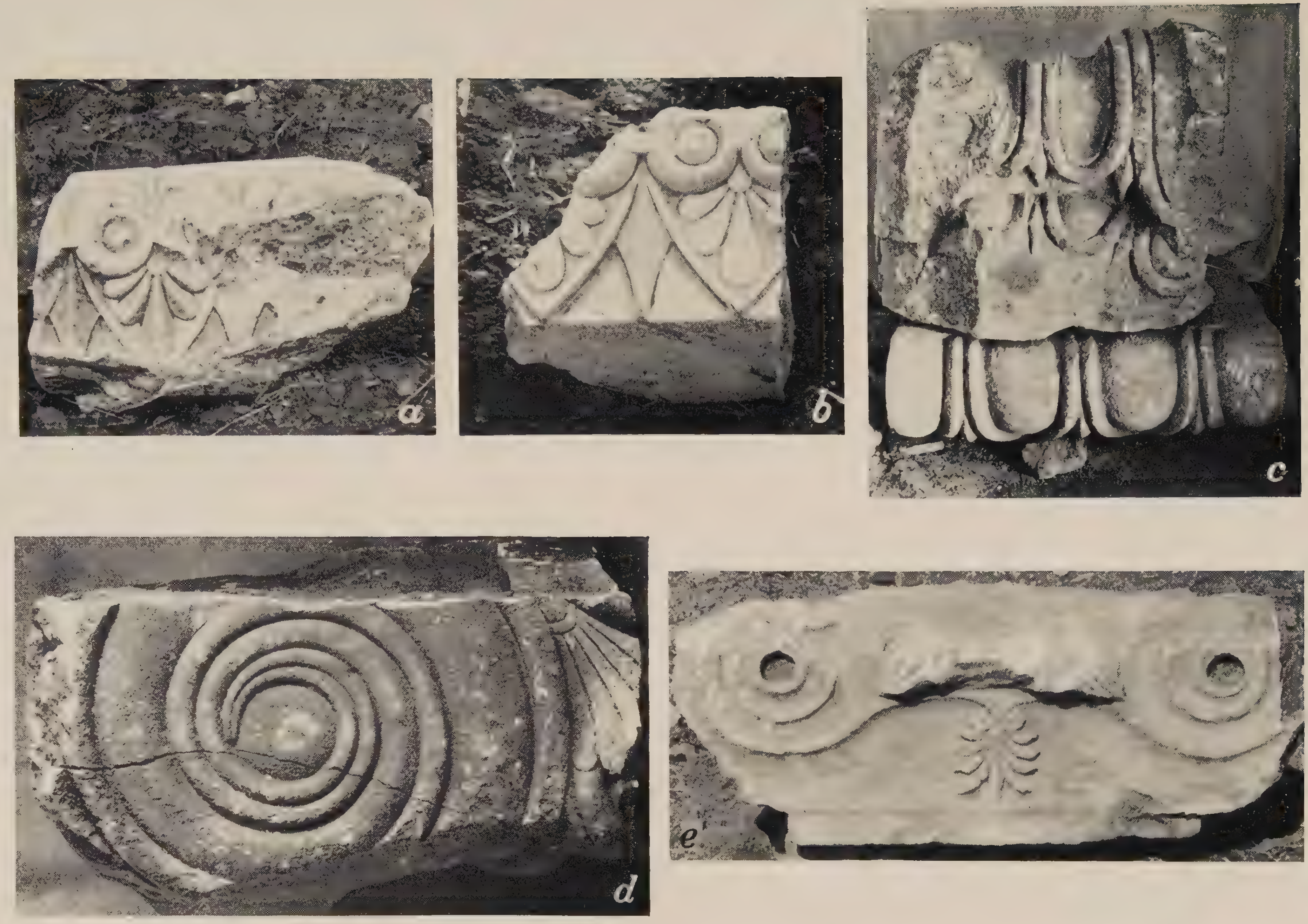
Kato Phaná: Plan of Temple, Basilica and Churches.

PLATE 29.



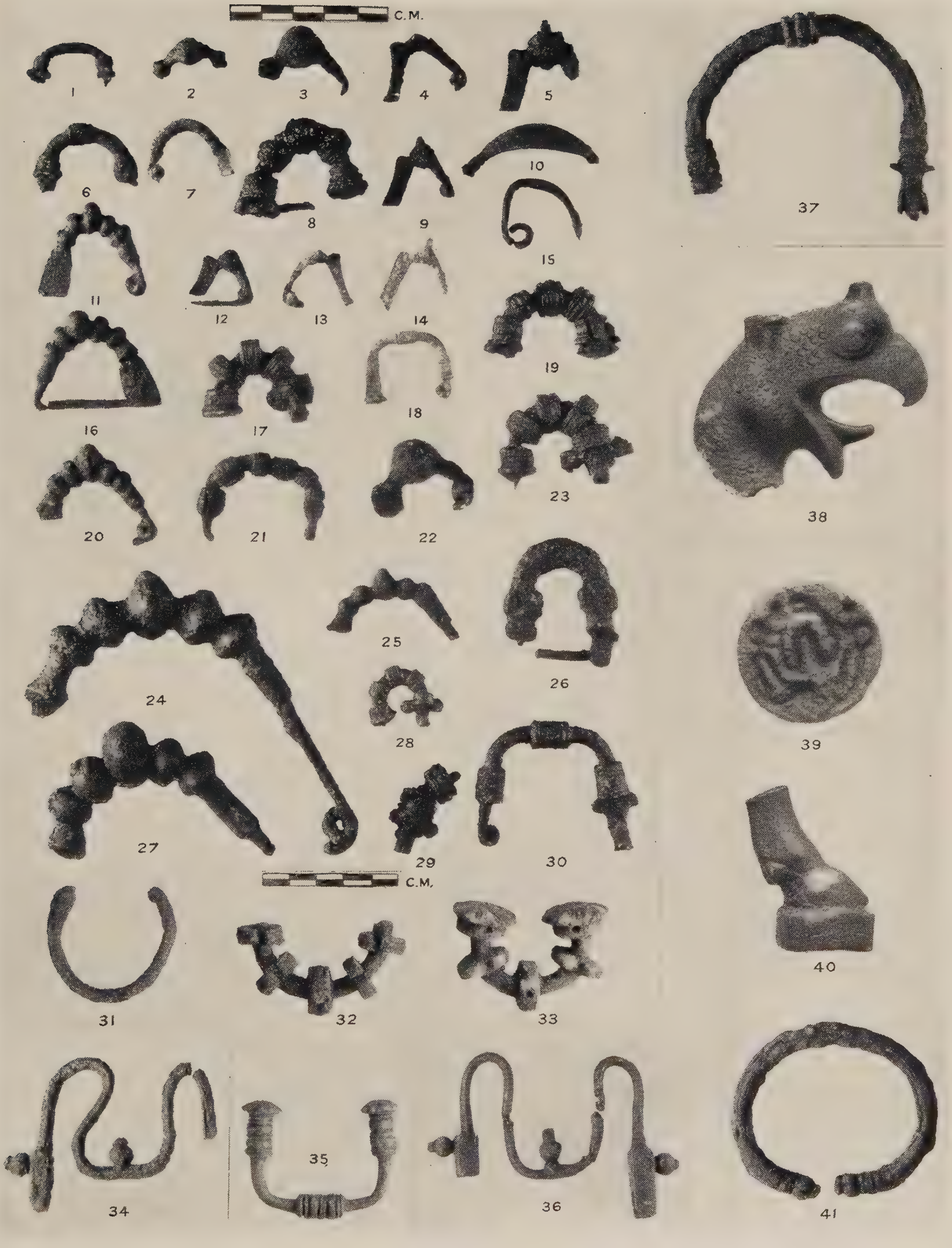
Kato Phaná: *a*, *b*, Archaic Enclosure Wall and Steps.
*c*, *d*, Later Enclosure Wall and Steps.
*e*, Early Christian Church.

PLATE 30.



Kato Phaná: *a*, *b*, Fragments of Cornice. *c*-*e*, Capitals.

PLATE 31.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C.M.
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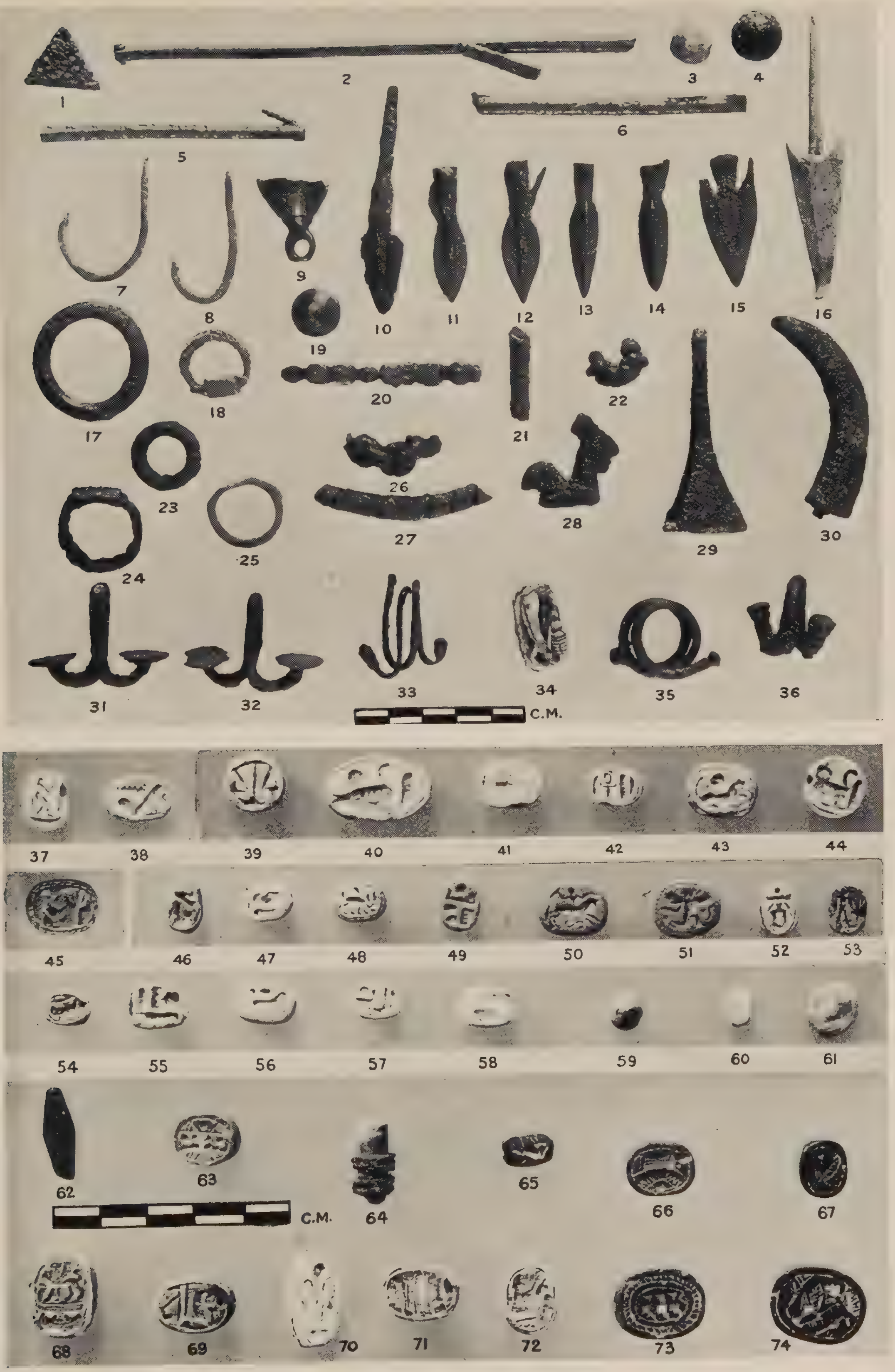
Kato Phaná: Bronze and Silver.

(The top scale refers to nos. 1–30, the lower to nos. 31–37 and 41; nos. 38–40 are slightly less than ½.)

PLATE 32.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C.M.
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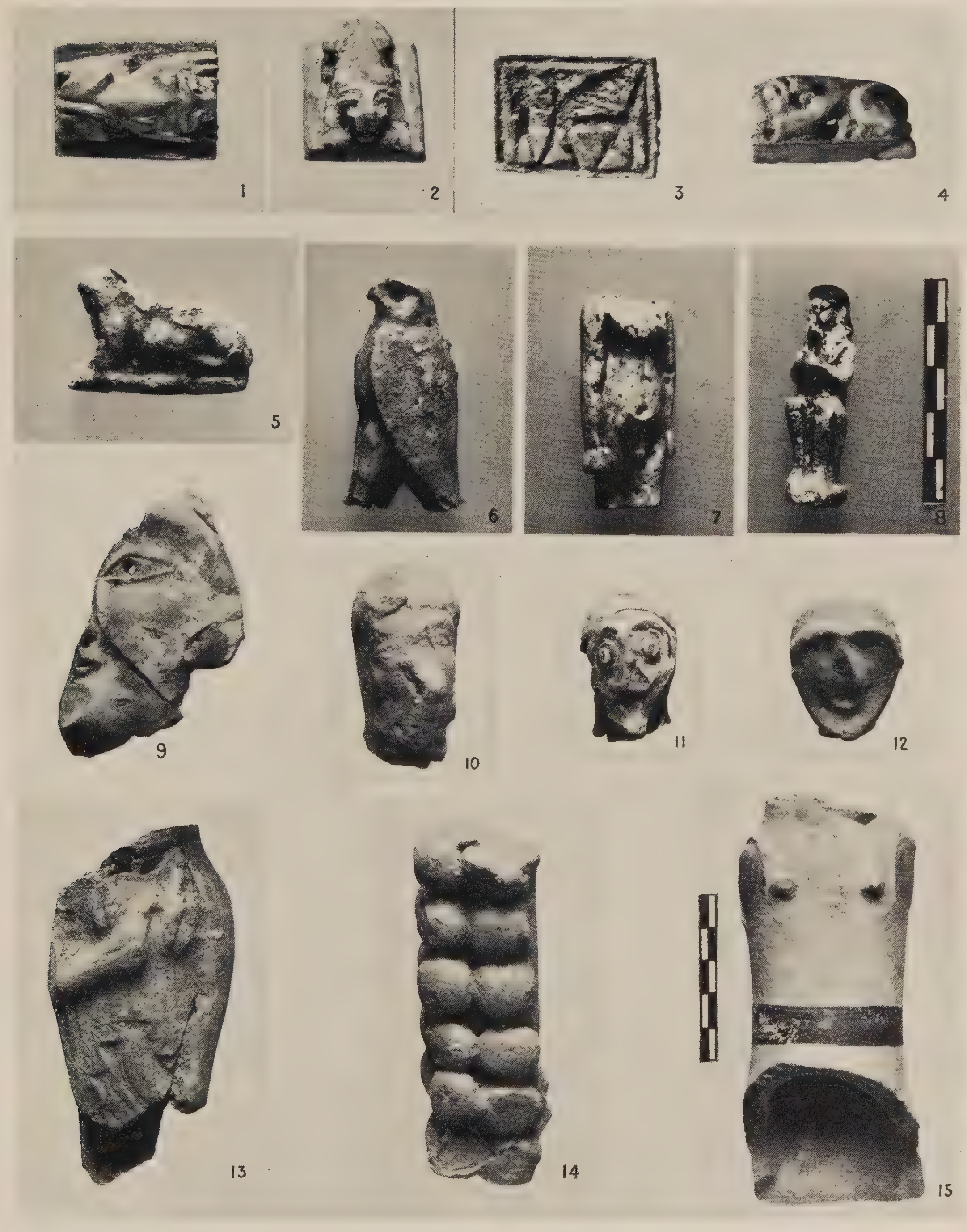
Kato Phaná: Above, Bronze and Silver. Below, Scarabs, etc.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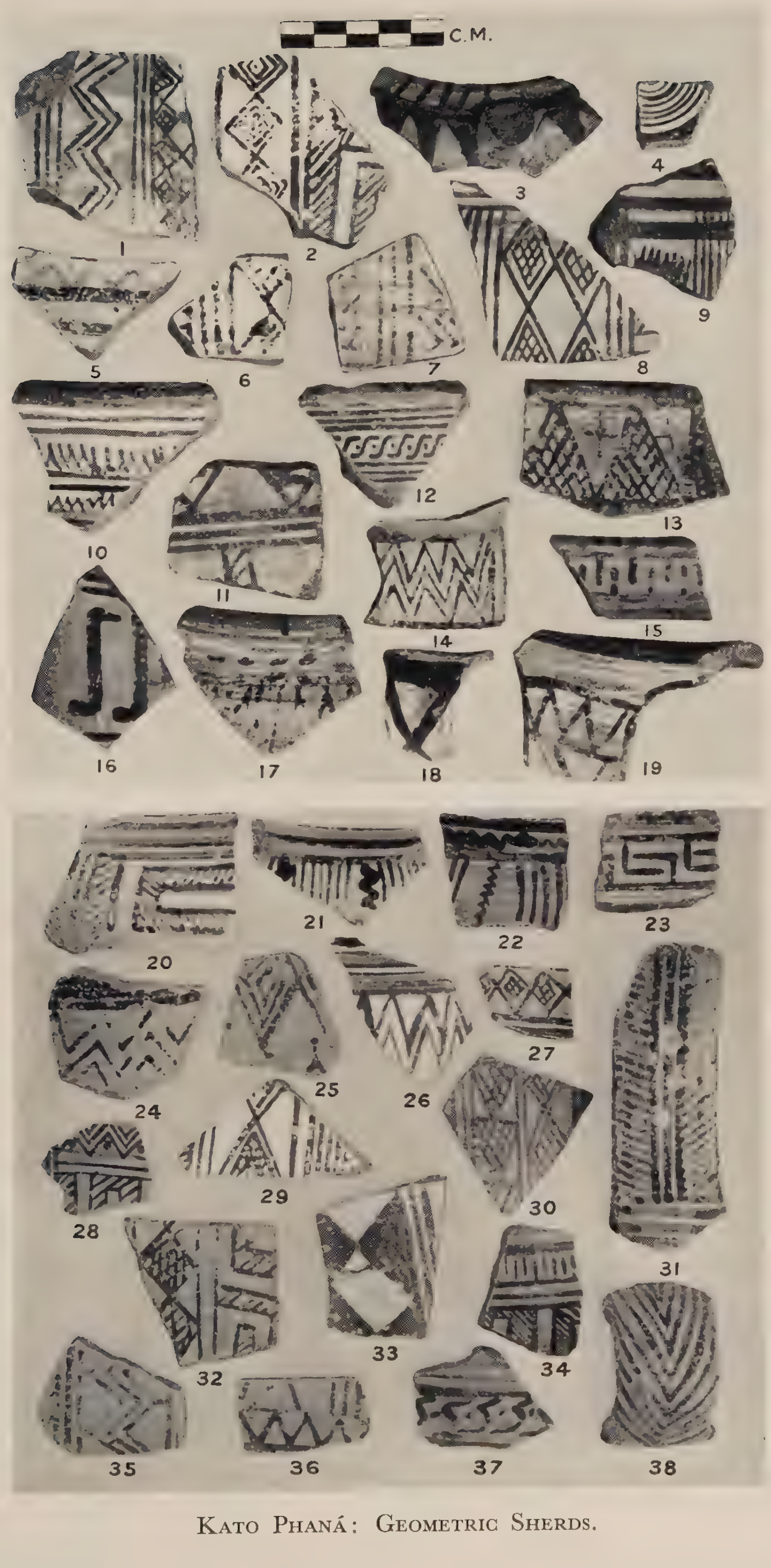
Kato Phaná: Nos. 1–4, Bone or Ivory Seal. (Scale, slightly over life size.)
Nos. 5–8, Faïence. (Scale as no. 8.)
Nos. 9–15, Terracotta. (Scale as no. 15.)

PLATE 34.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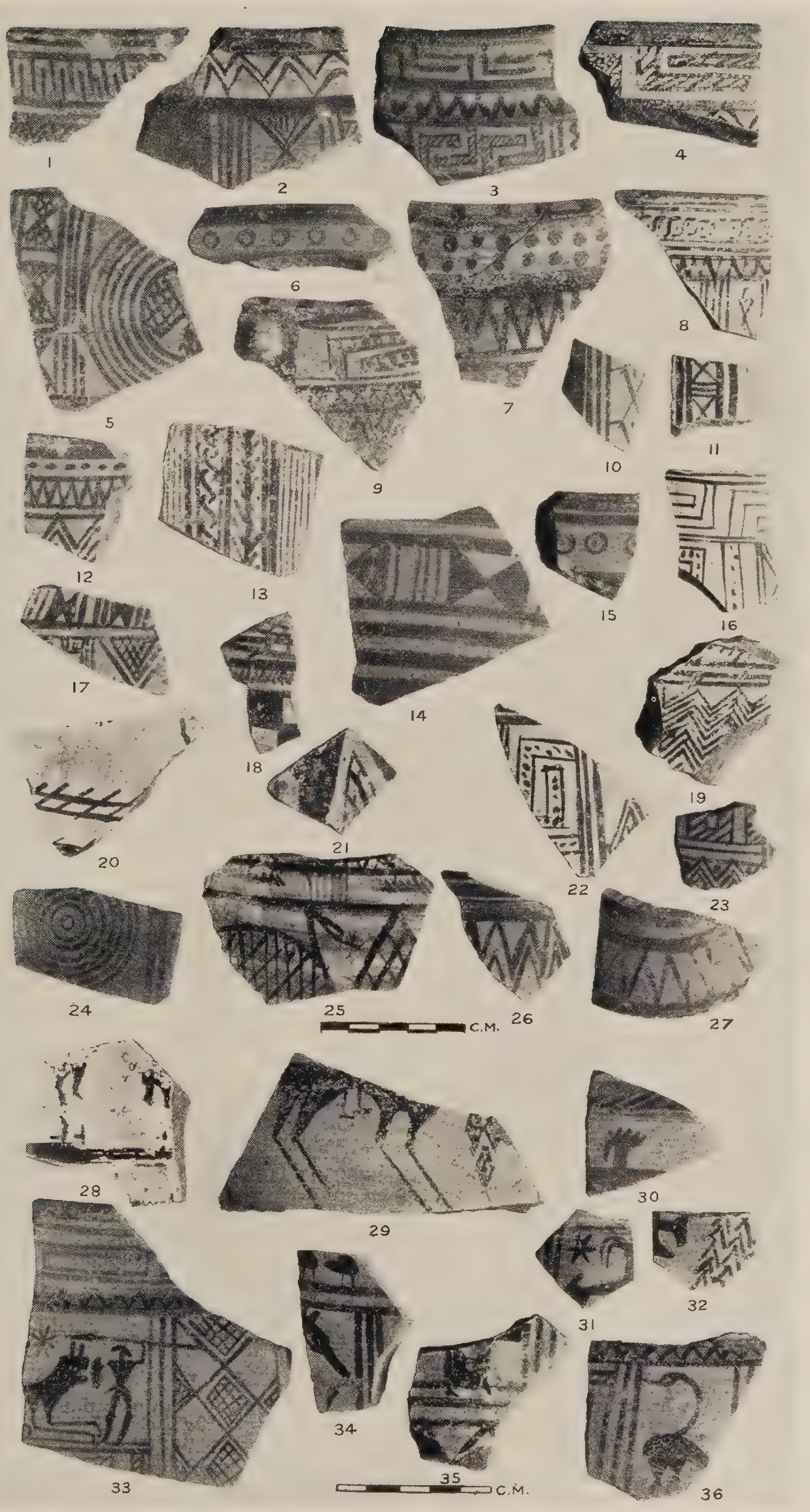
Kato Phaná: Geometric Sherds.

PLATE 35.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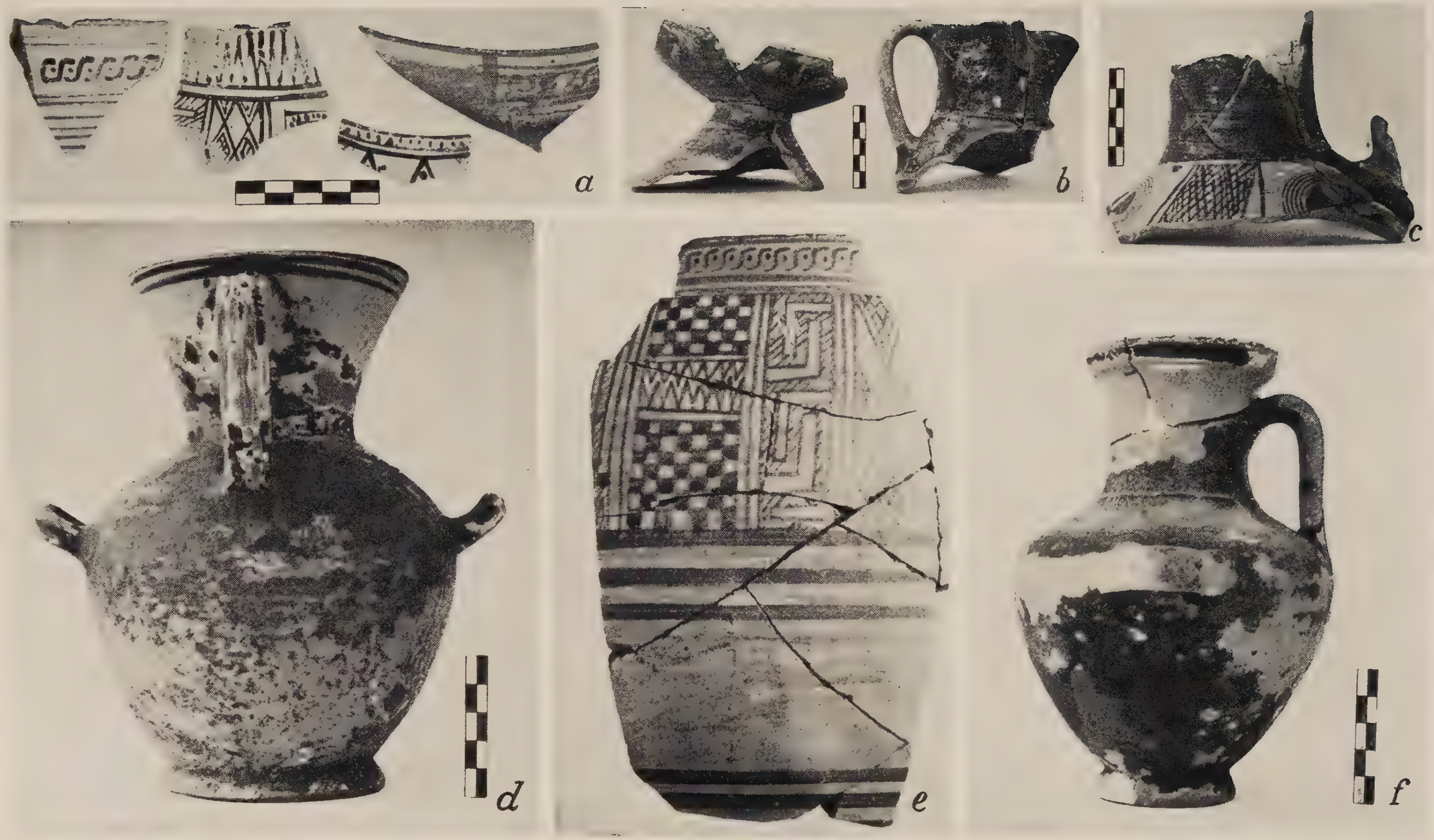
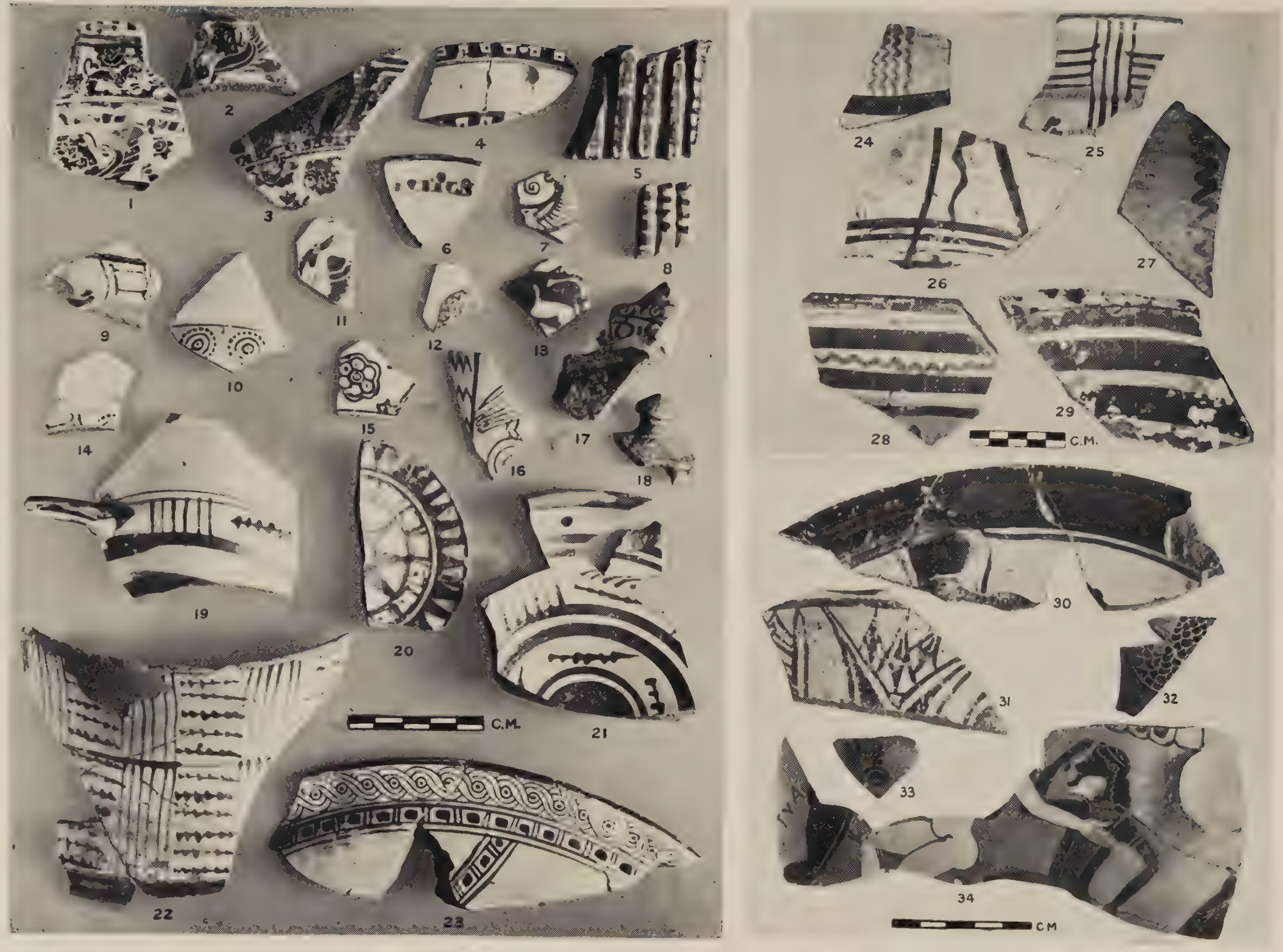
C.M.

Kato Phaná: Geometric and Transitional Sherds.



Kato Phaná: *a*, Transitional Sherds. *b*, *c*, *e*, Geometric Sherds (ht. of *e*, ·22 m.). *d*, *f*, Naucratite (?) Hydriai.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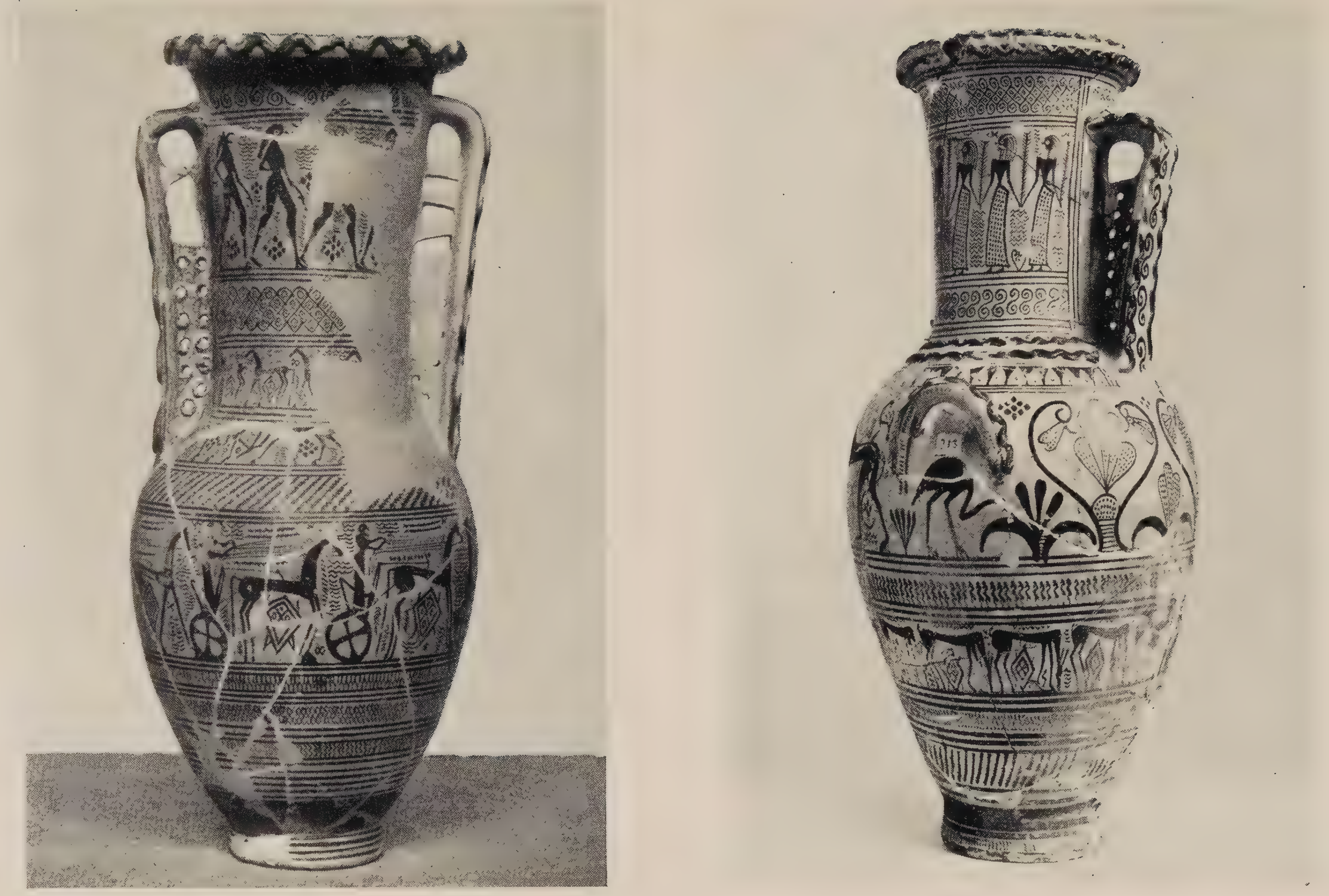
CM

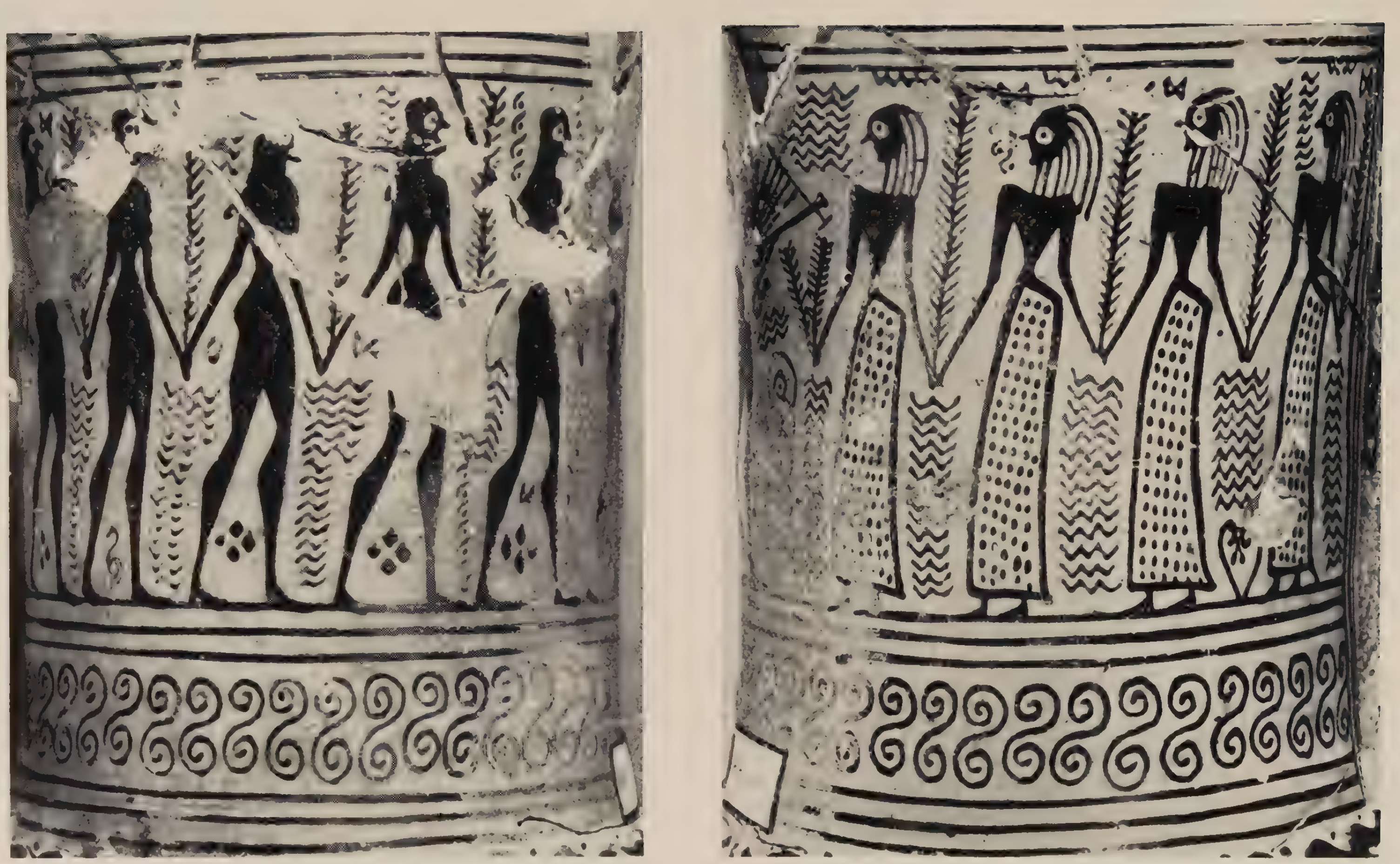
KATO PHANA: NOS. 1–23, 30, NAUKRATITE SHERDS. NOS. 24 29, COARSE WARE. NOS. 31 34, IMPORTED SHERDS.

PLATE 37.

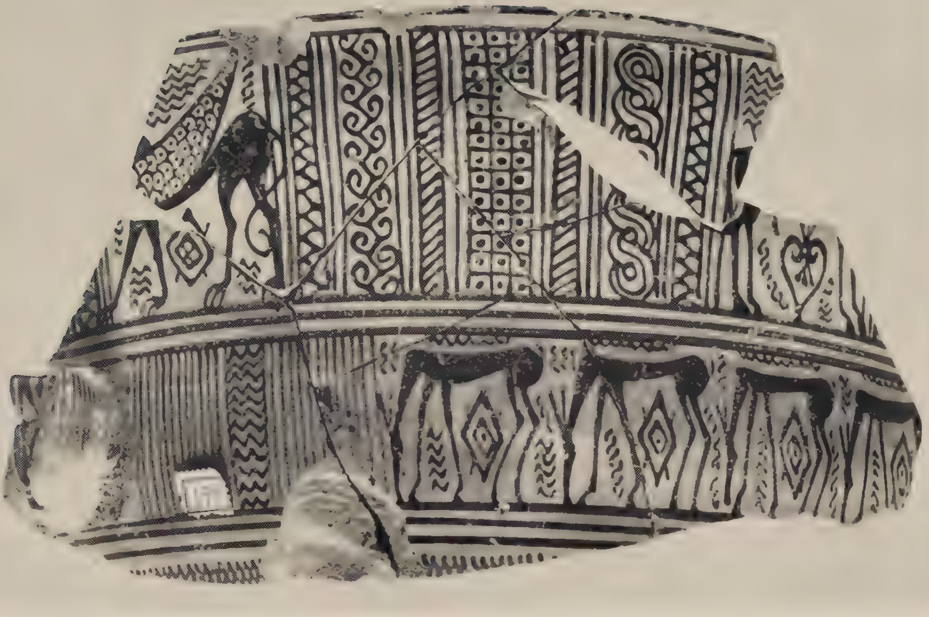


*a.* *b.*

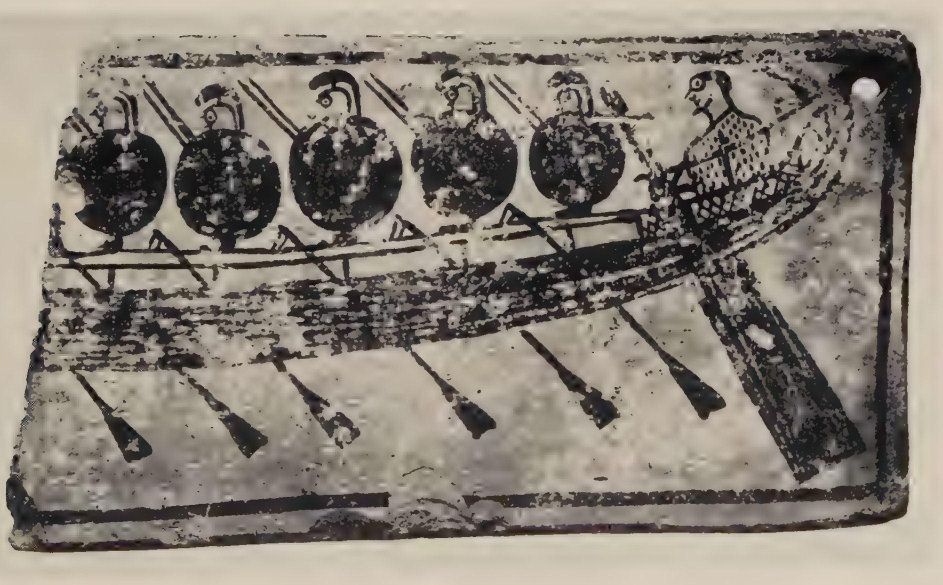
Protoattic Pottery: *a*, Amphora in Oxford; *b*, Hydria in Athens.
Scale: c. 1 : 4·25.



Protoattic Pottery: Details of Hydria in Athens (Pl. 1 *b*).
Slightly under actual size.

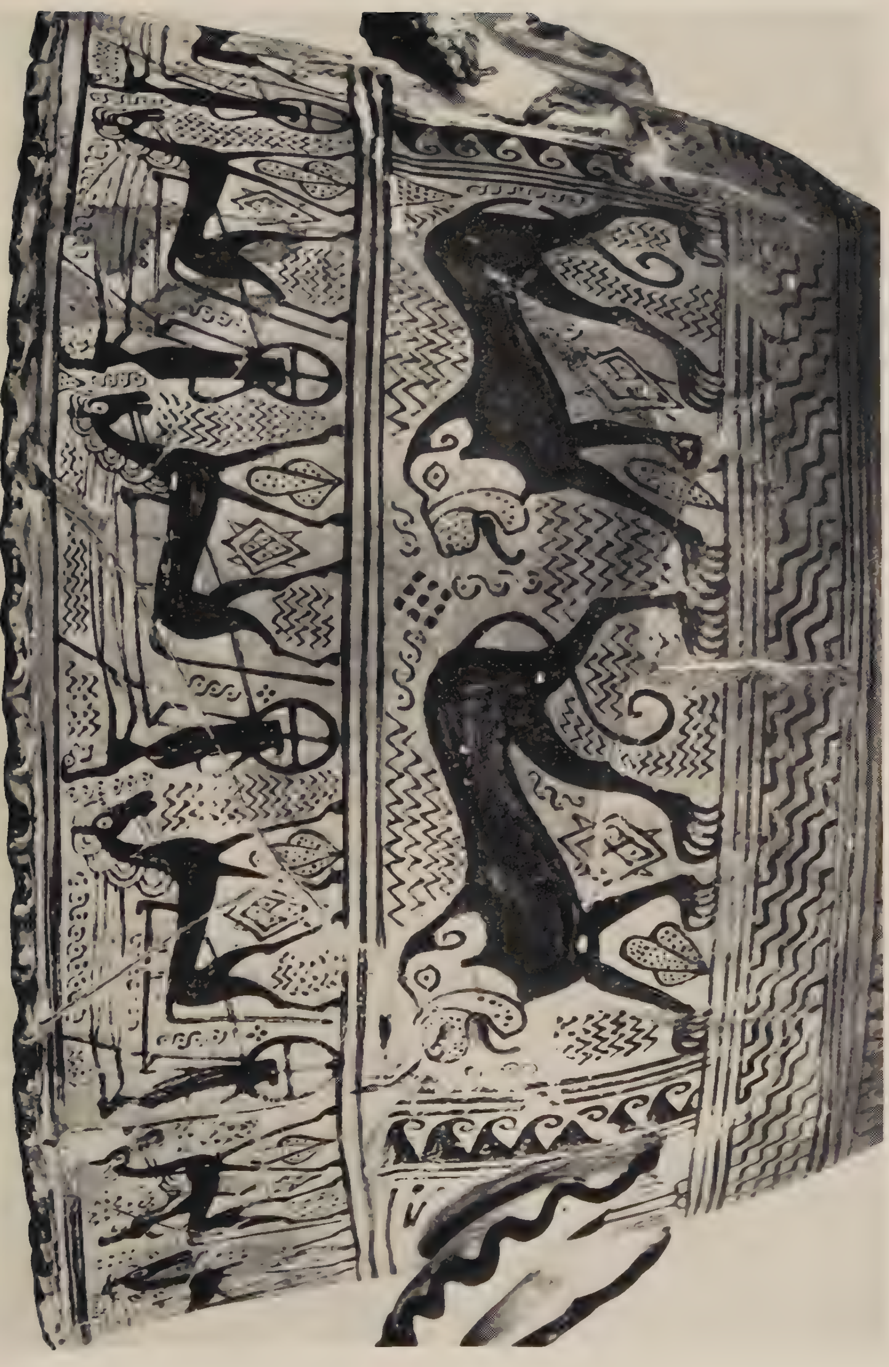


*a*.



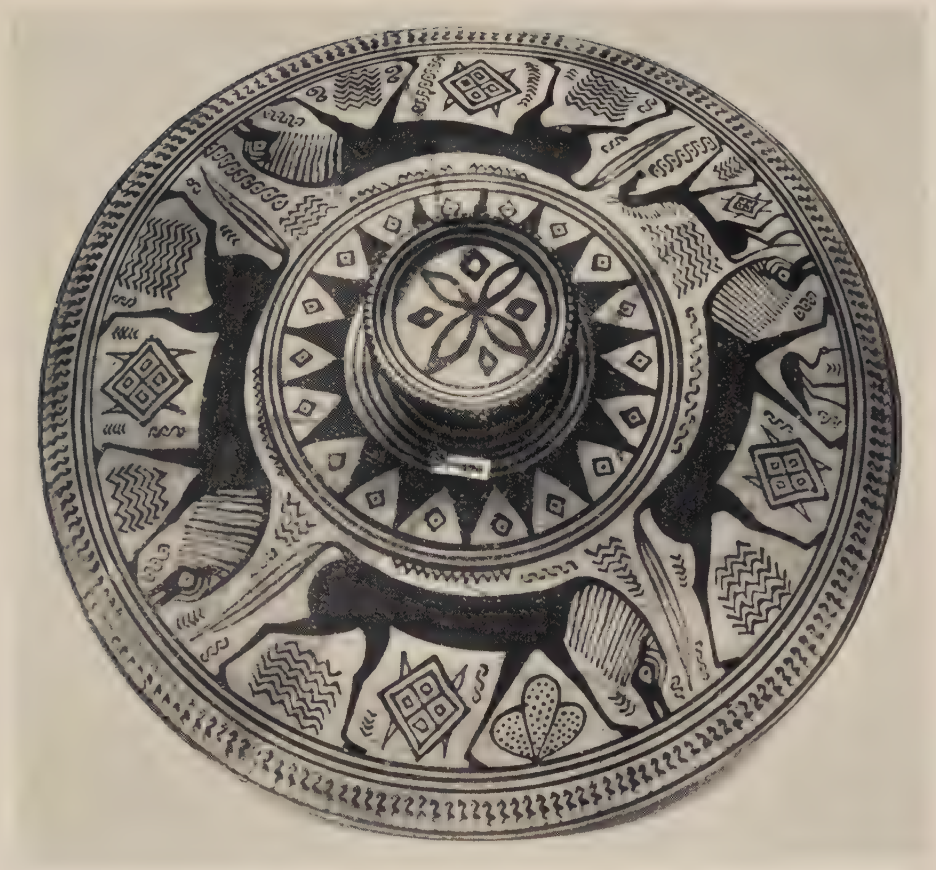
*b*.

Protoattic Pottery: *a*, Fragment in Eleusis; *b*, Plaque in Athens.
Scale: *a*, rather over 1 : 2; *b*, c. 3 : 4.

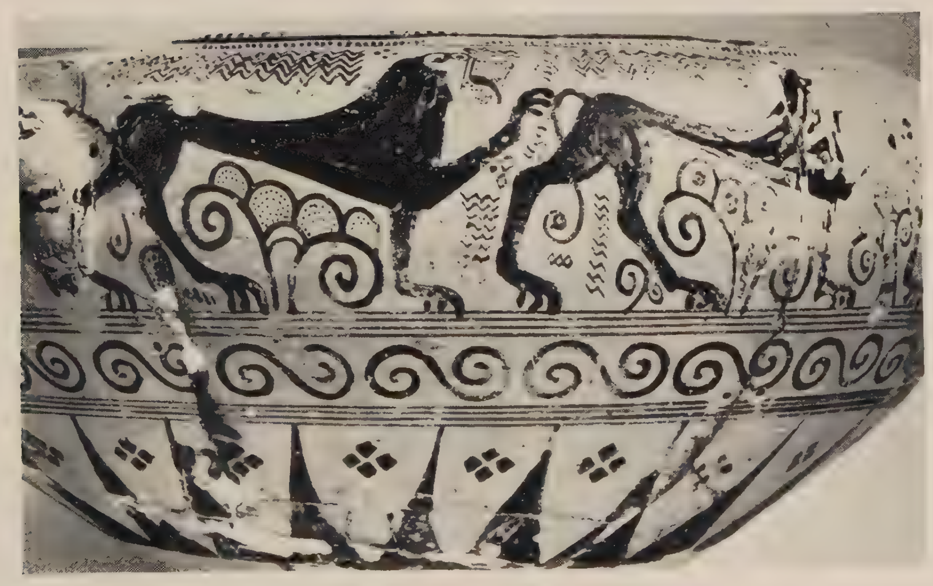


Protoattic Pottery: Krater in Munich.

Scale: slightly under 1 : 2.

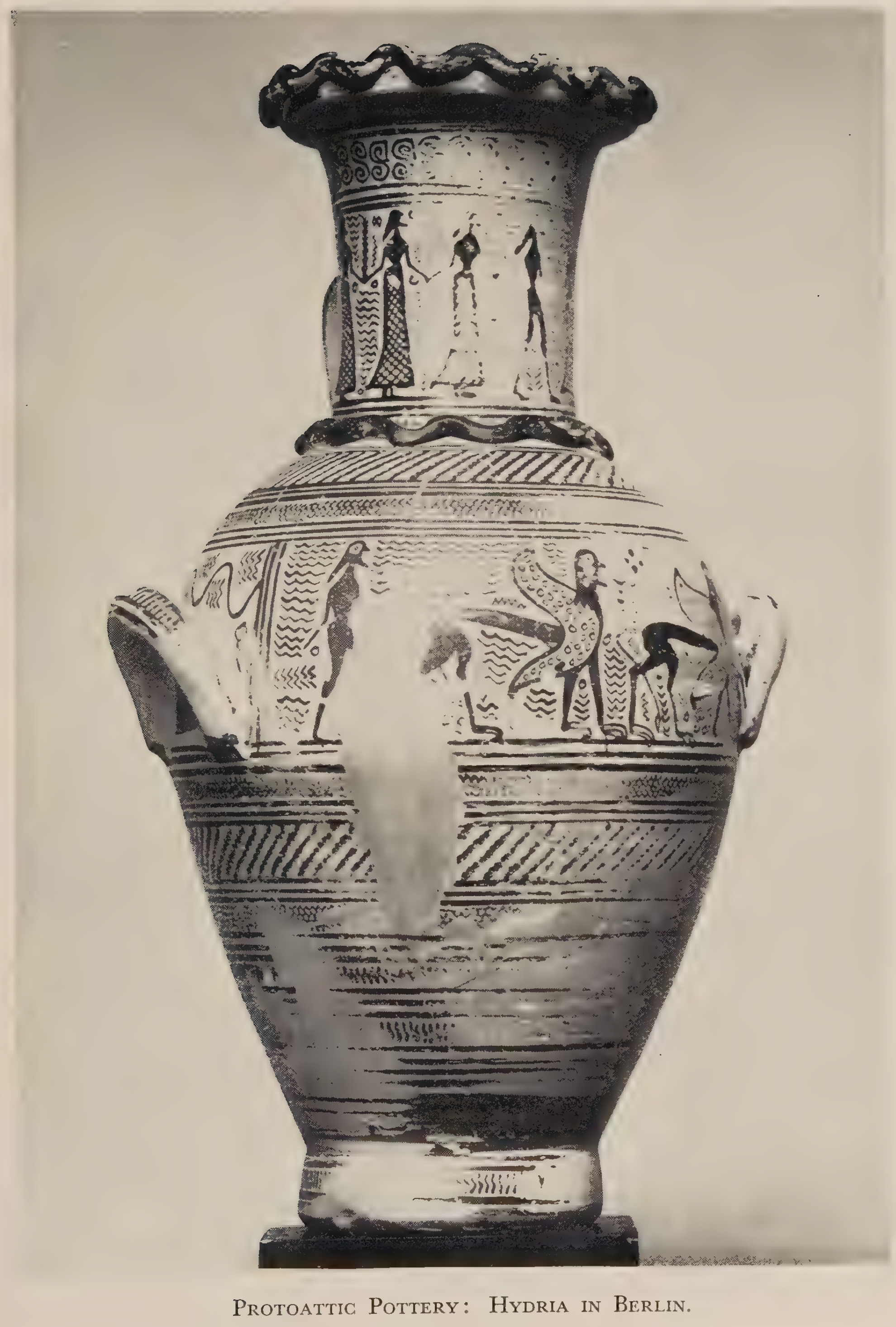


*a.*

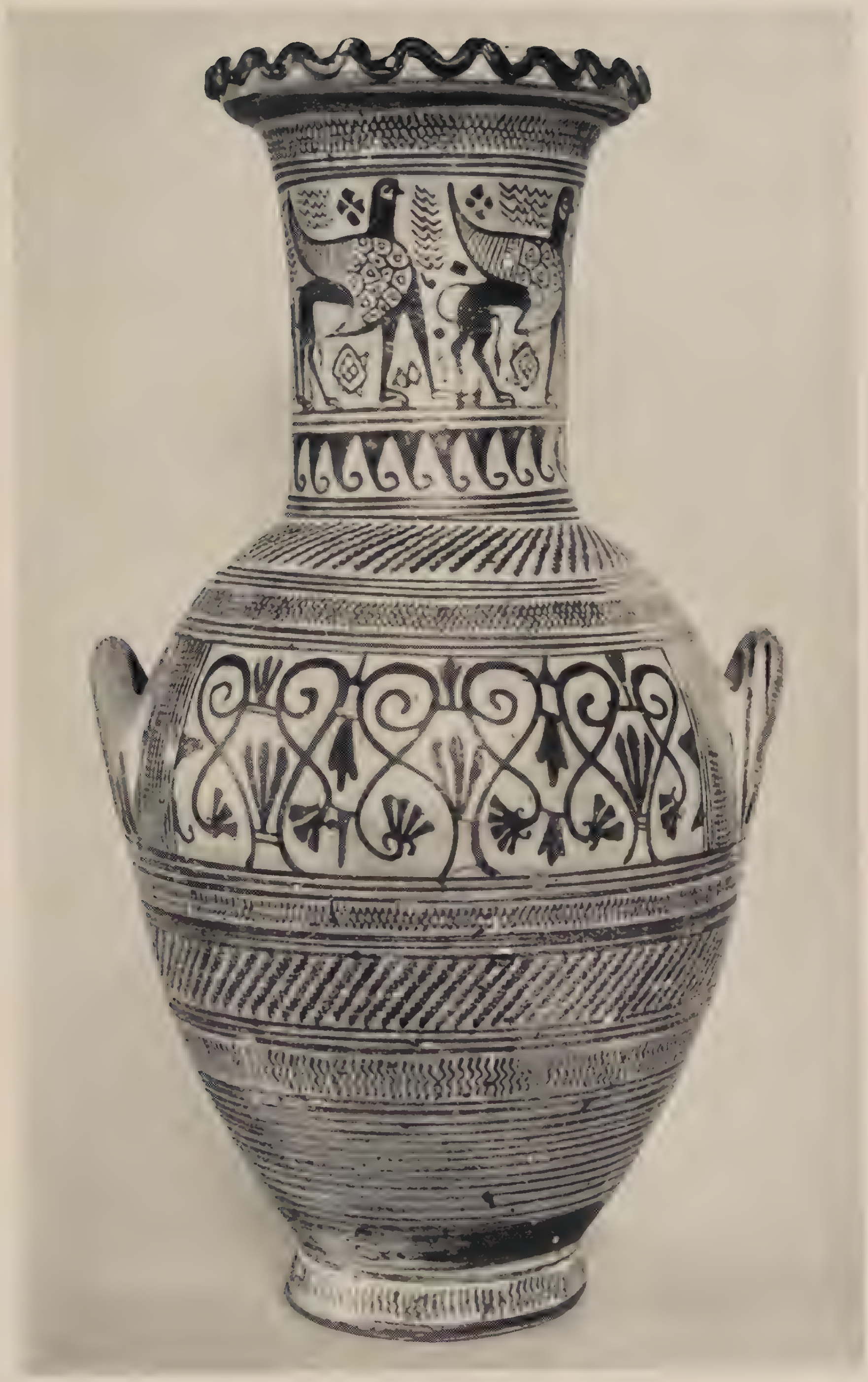


*b.*

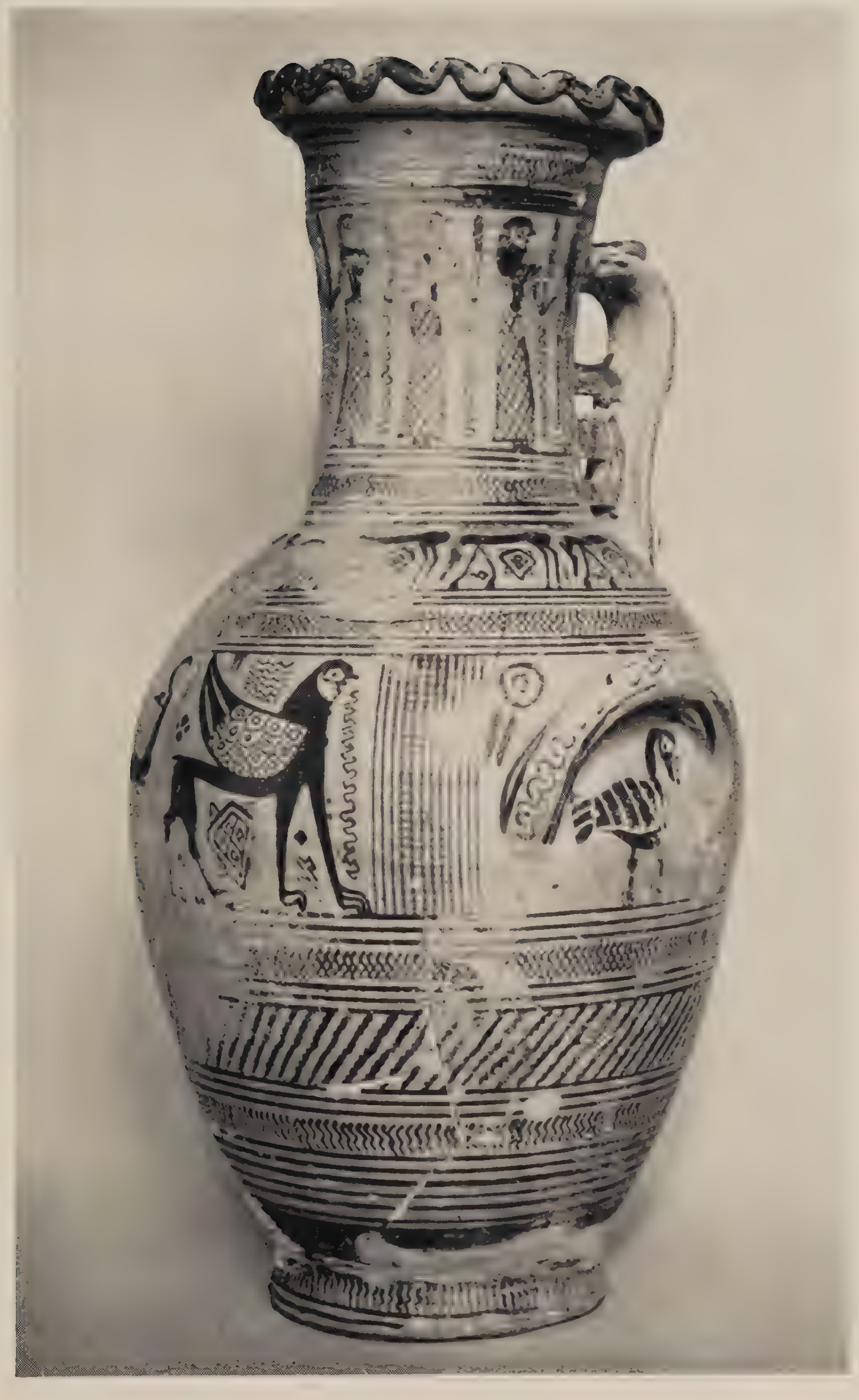
Protoattic Pottery: *a*, Lid in British Museum; *b*, Krater in Athens.
Scale: c. 2 : 5.



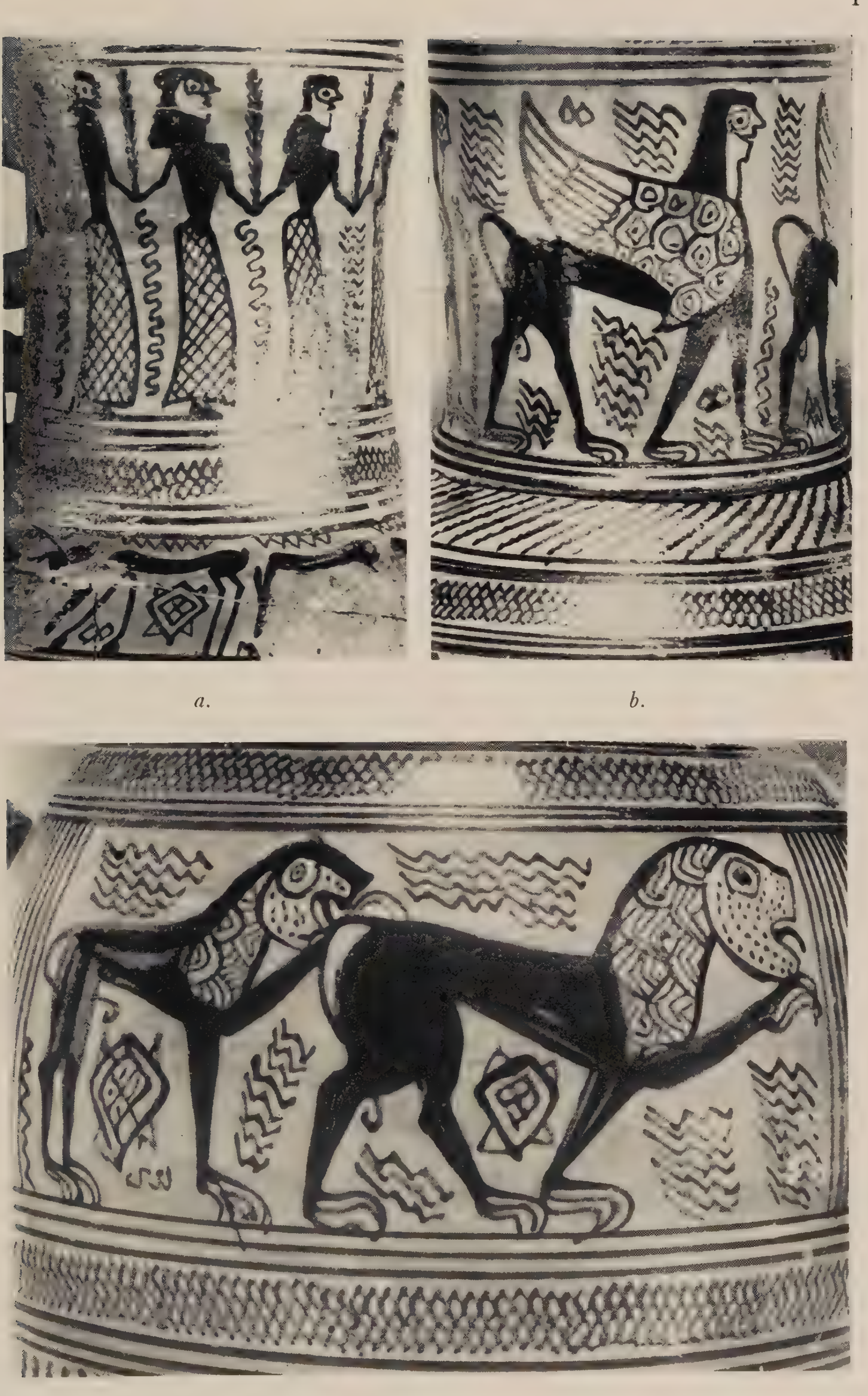
Protoattic Pottery: Hydria in Berlin.
Scale: c. 2 : 5.



Protoattic Pottery: Hydria in Vlasto Collection.
Scale: c. 2 : 5.



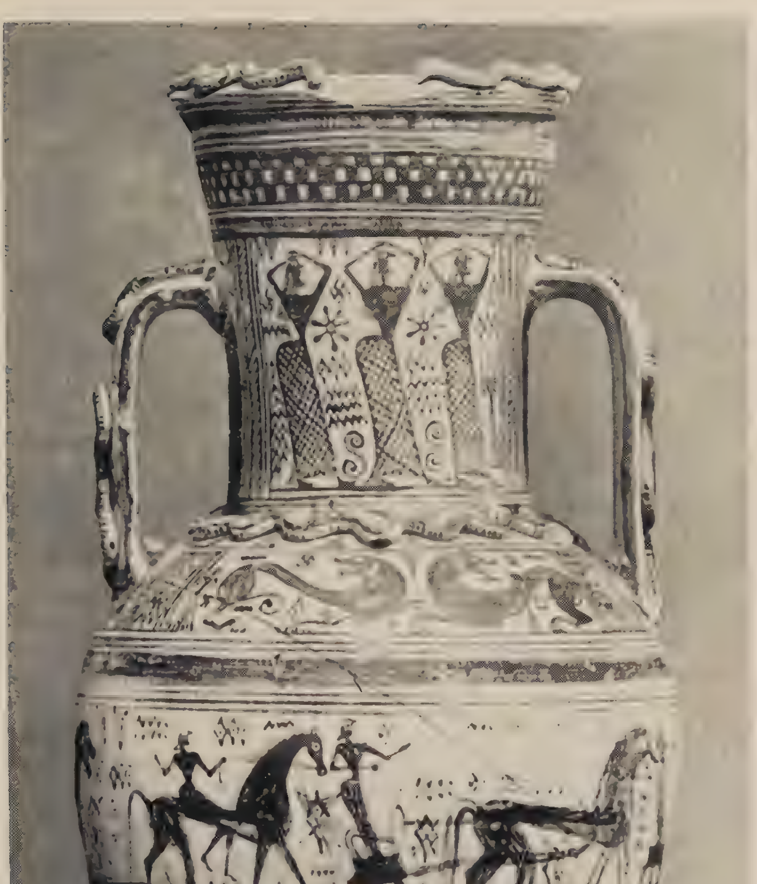
Protoattic Pottery: Hydria in Vlasto Collection (cf. Pl. 9 *a*).
Scale: c. 2 : 5.



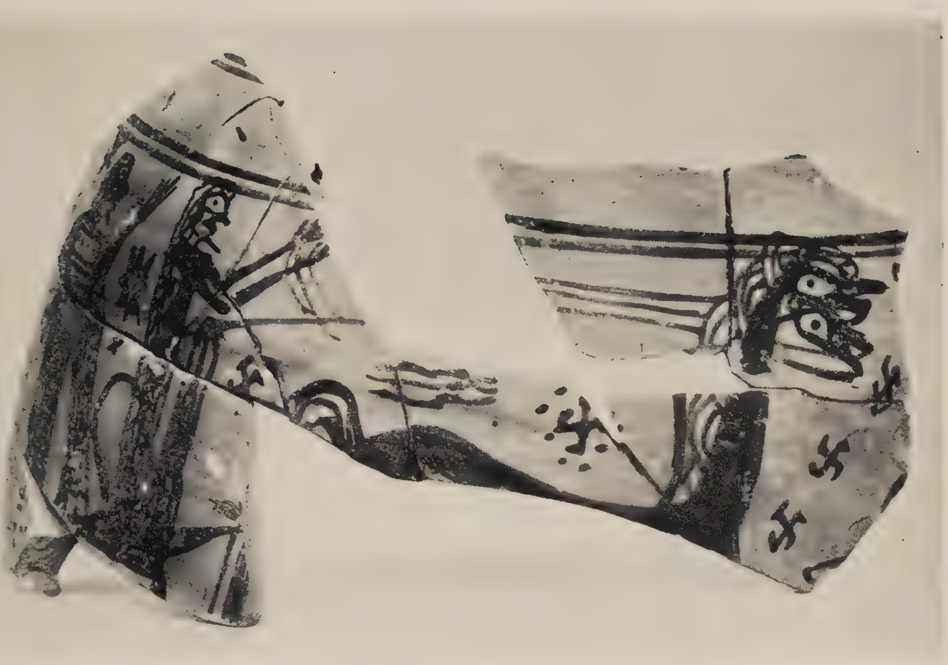
*a.* *b.*

*c.*

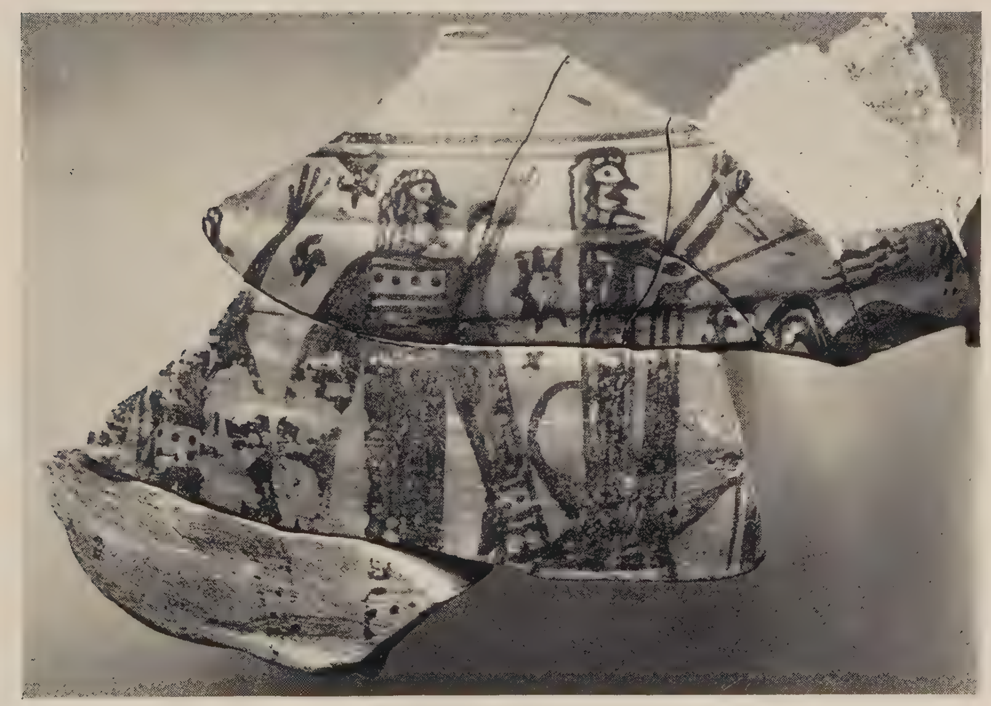
PROTOATTIC POTTERY: *a*, DETAIL OF HYDRIA IN VLASTO COLLECTION (PL. 8).
*b* AND *c*, DETAILS OF HYDRIA IN VLASTO COLLECTION.
Scale: *a* and *b*, c. 3 : 5; *c*, c. 2 : 3.



Protoattic Pottery: Amphora in New York.
Scale: c. 2 : 9.

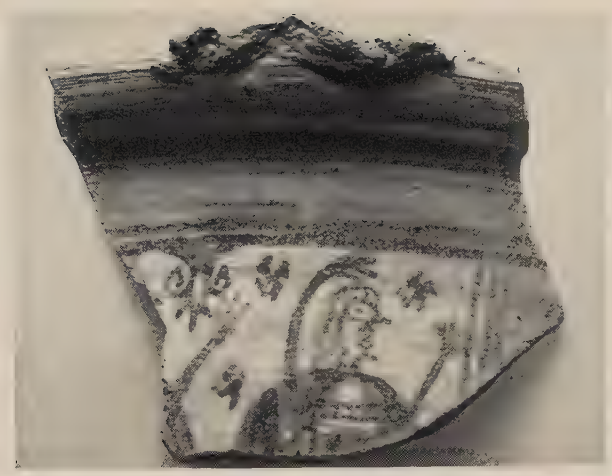


*a.*

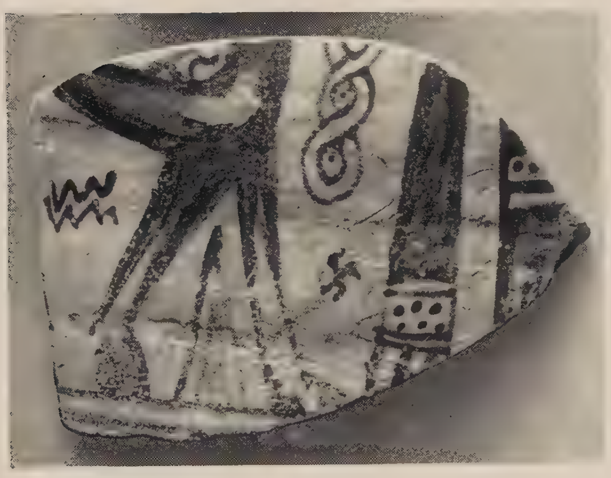


*b.*

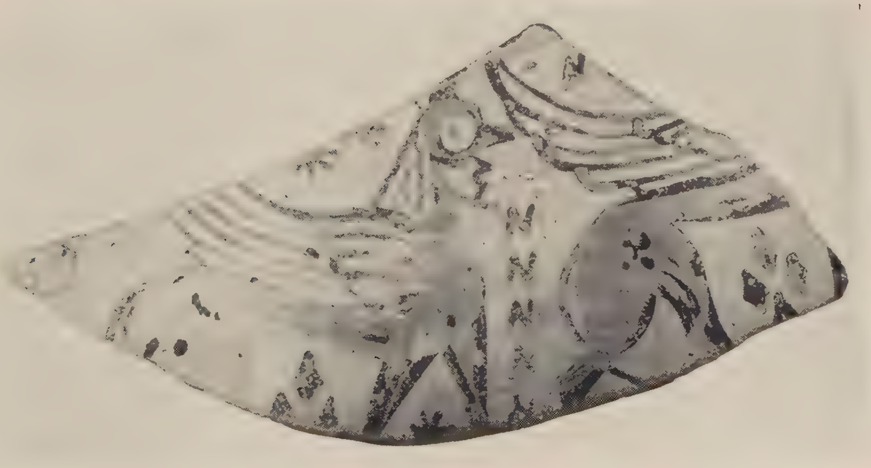
Protoattic Pottery: *a* and *b*, Fragments in Athens.
Scale: c. 2 : 3.



*a.*

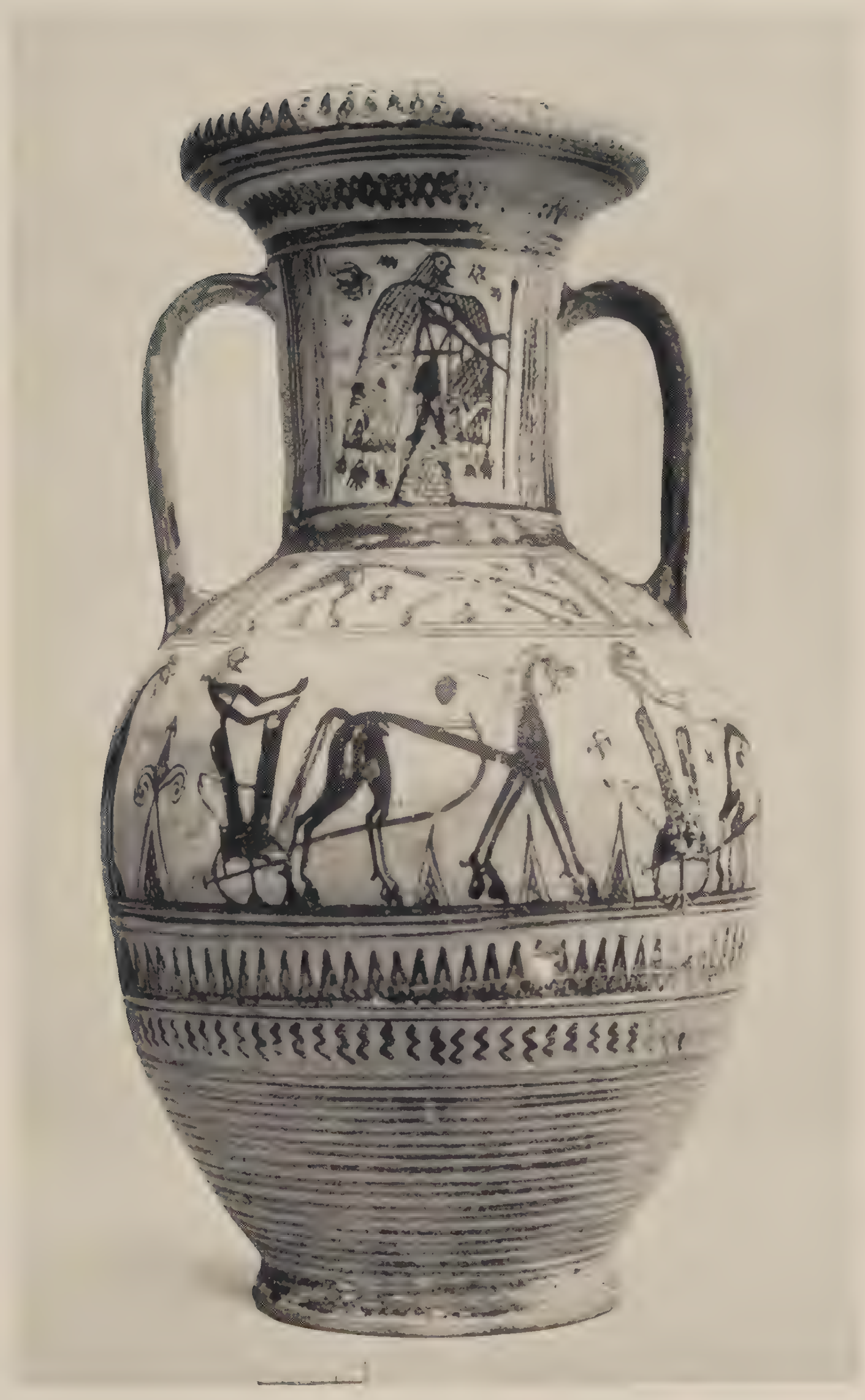


*b.*



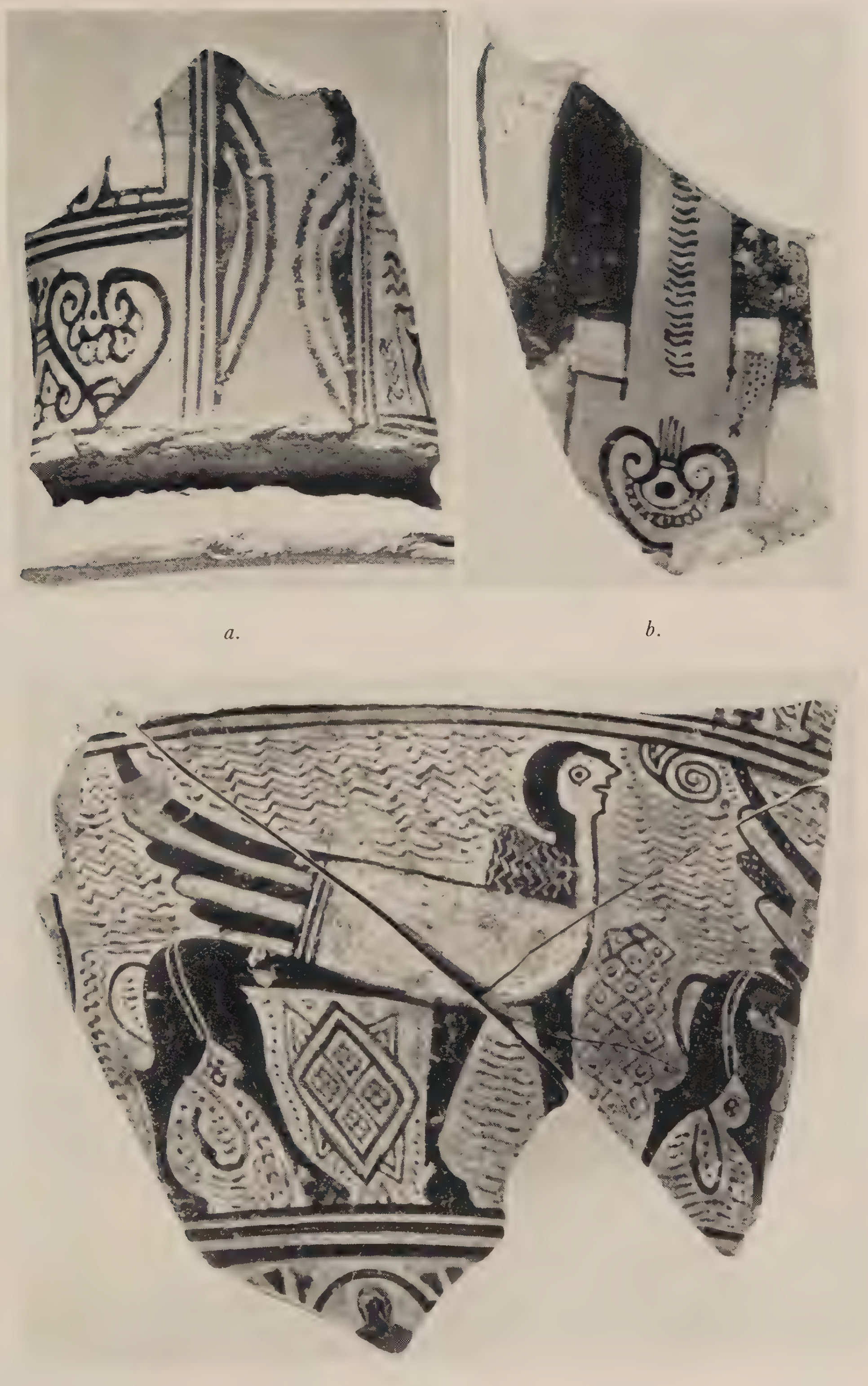
*c.*

PROTOATTIC POTTERY: FRAGMENTS, *a* AND *b* IN ATHENS. *c* IN PRIVATE HANDS.
Scale: c. 5 : 7.



Protoattic Pottery: Amphora in New York.
Scale: Just over half actual size.

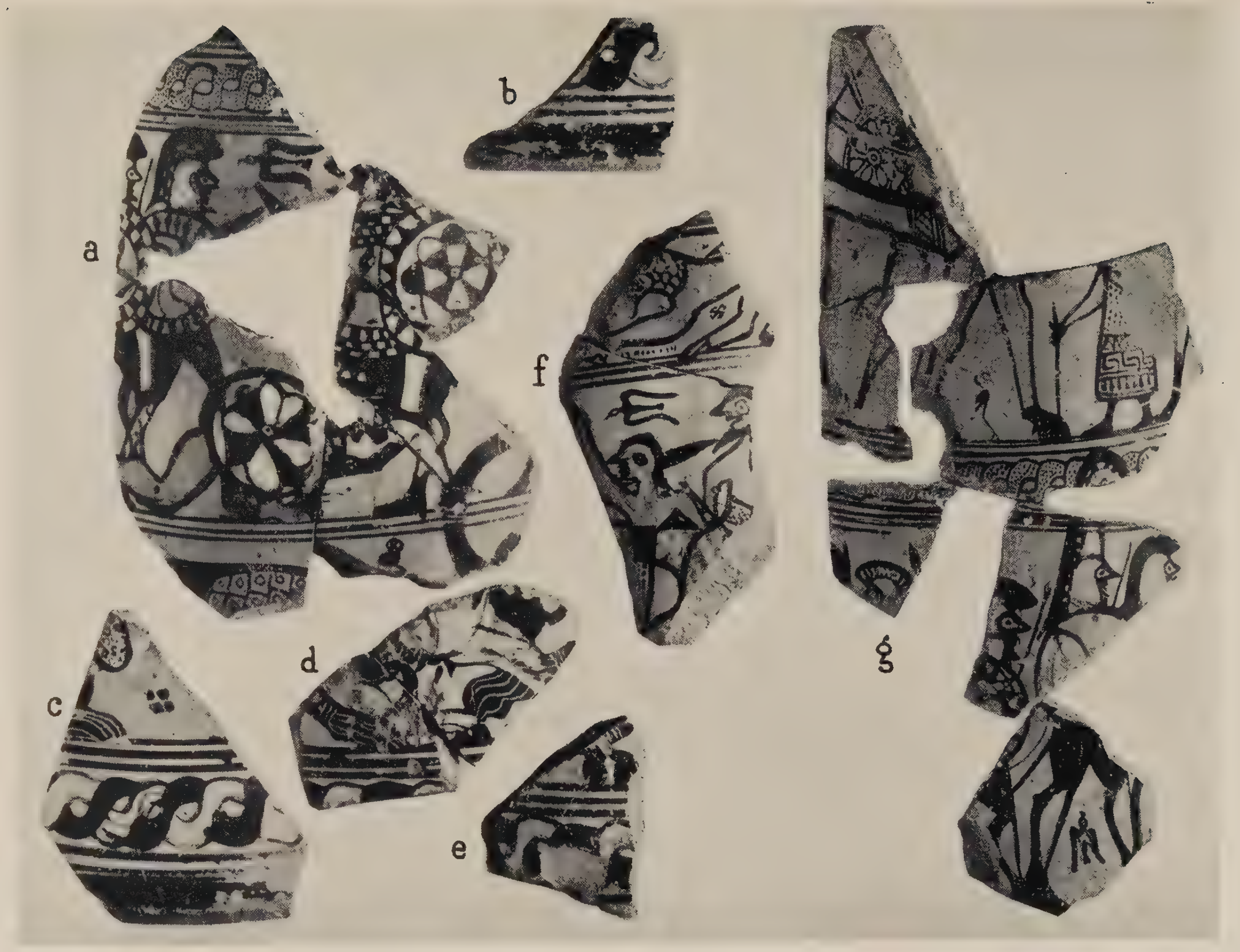
PLATE 51.



*a.* *b.*

*c.*

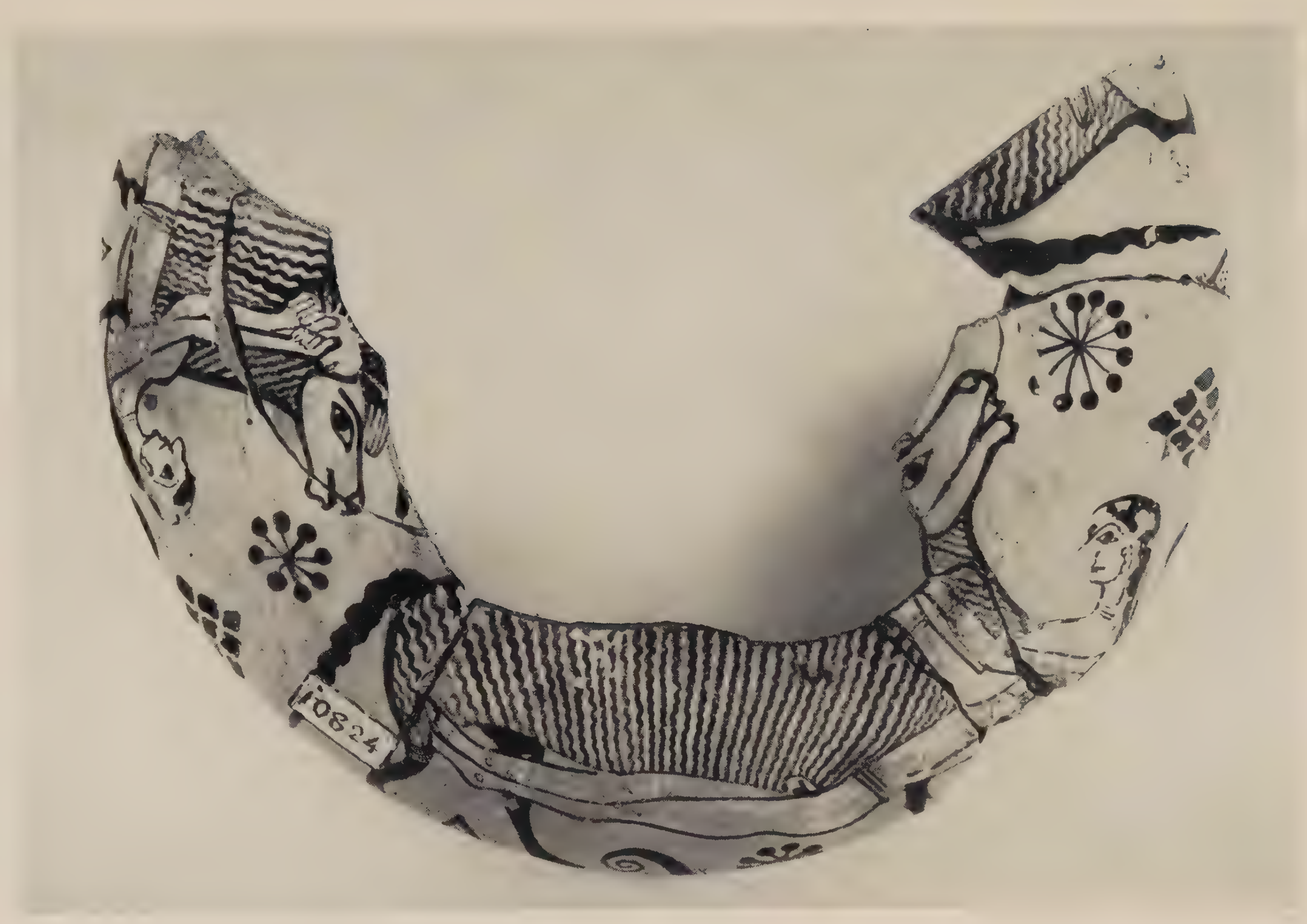
Protoattic Pottery: *a* and *b*, Fragments in Eleusis; *c*, Fragment in Vlasto Collection.
Scale: *b*, c. 3 : 5.



PROTOATTIC POTTERY: *a–g*, FRAGMENTS OF STAND IN ATHENS.

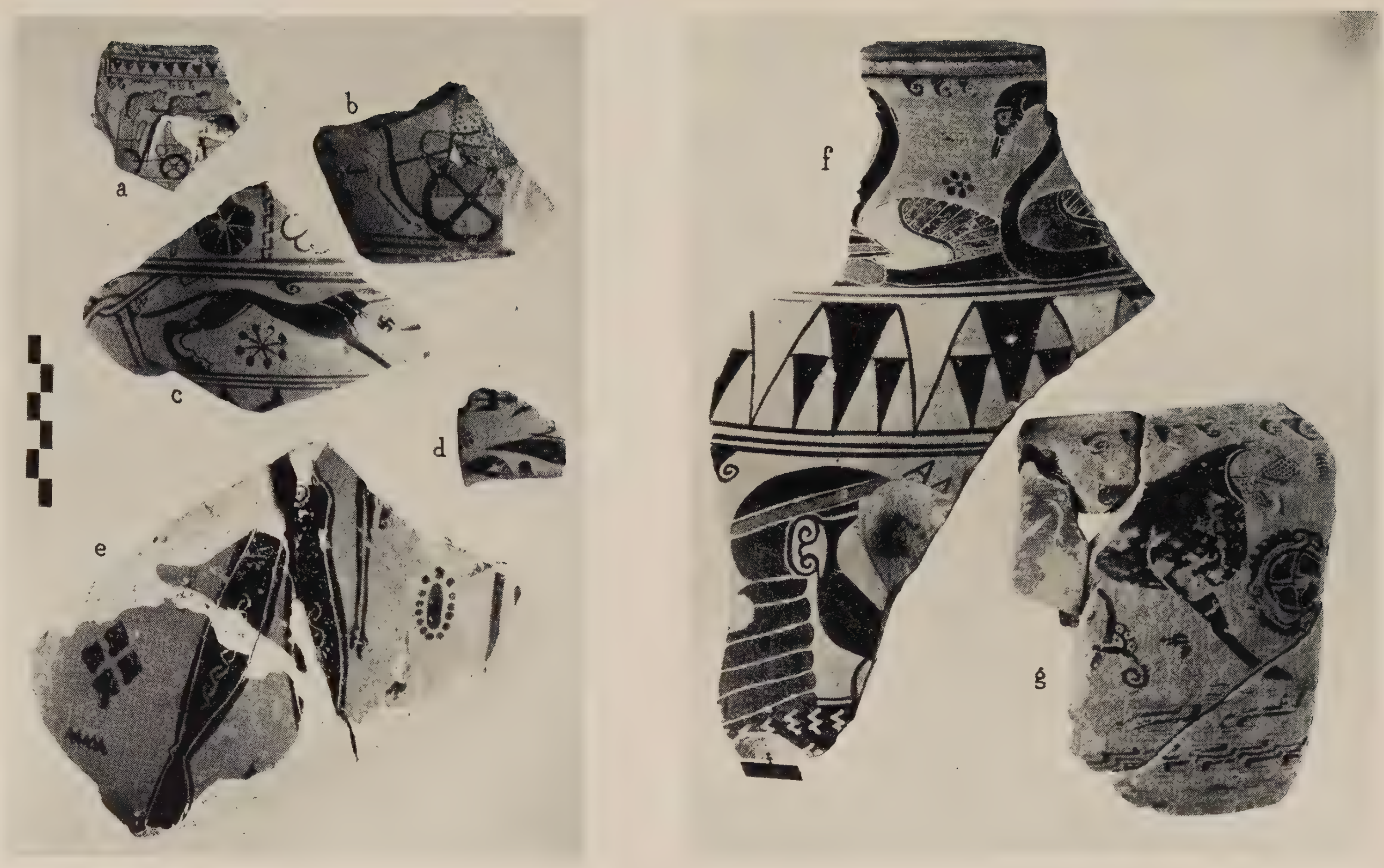
(*a*, from lower main frieze and lower animal band; *b–e*, from lower animal band and foot; *f*, from upper main frieze and upper animal band; *g*, from upper and lower main friezes.)

Scale: c. 2 : 5.

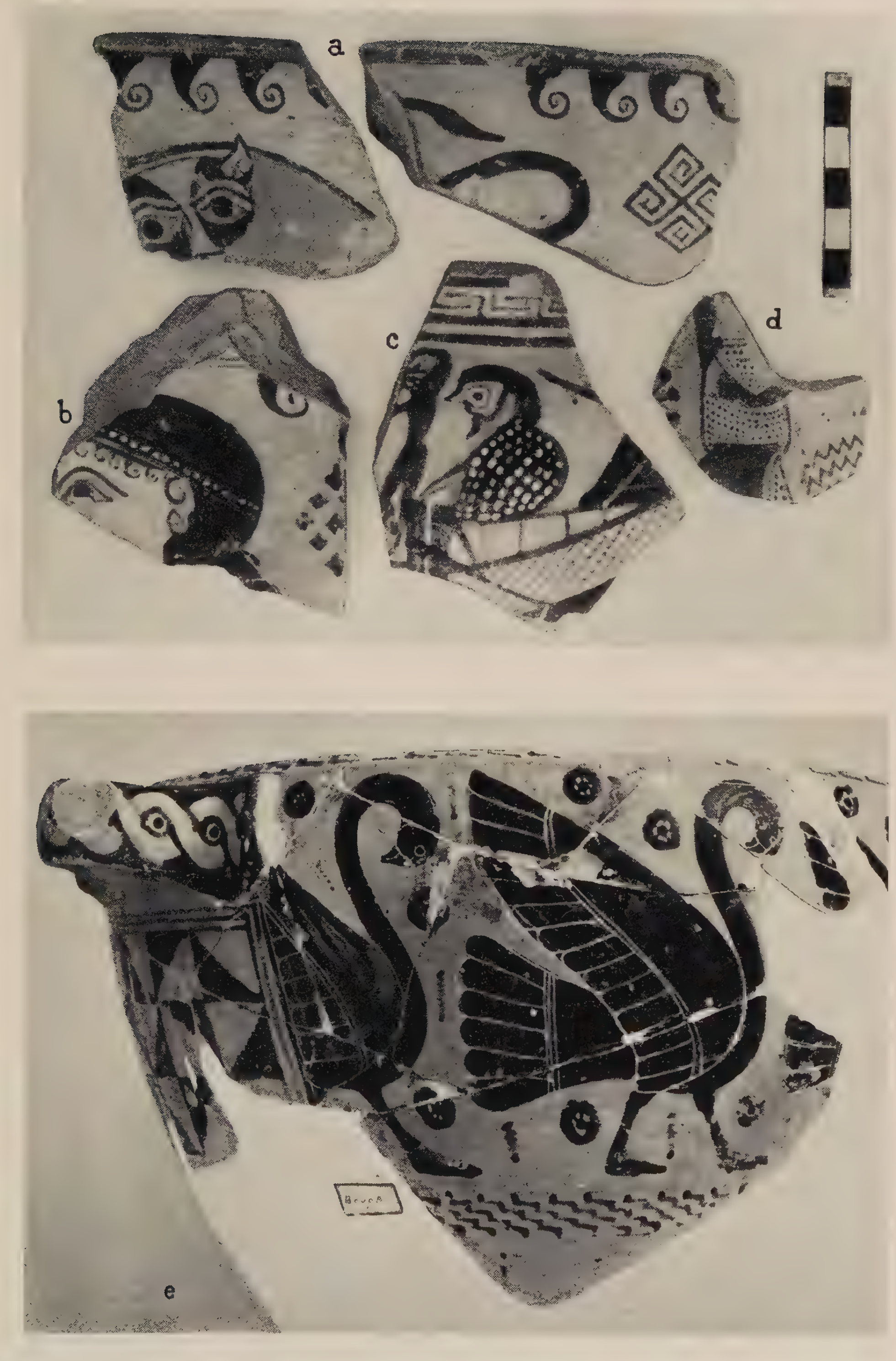


Protoattic Pottery: Jug in Aegina (Shoulder).
Scale: c. 3 : 5.

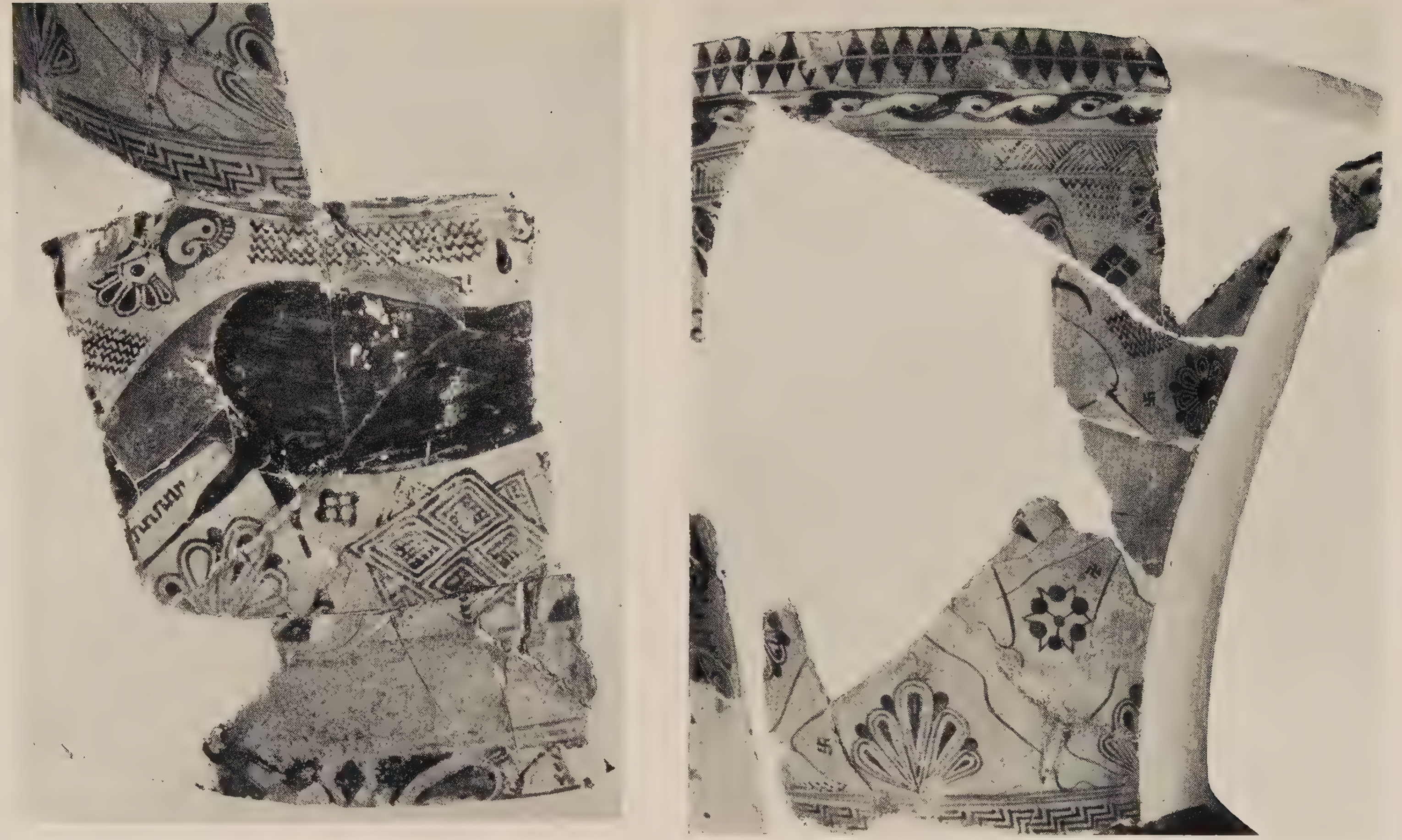
PLATE 54.



Protoattic Pottery: *a–g*, Fragments in Athens.
Scale: c. 2 : 5.

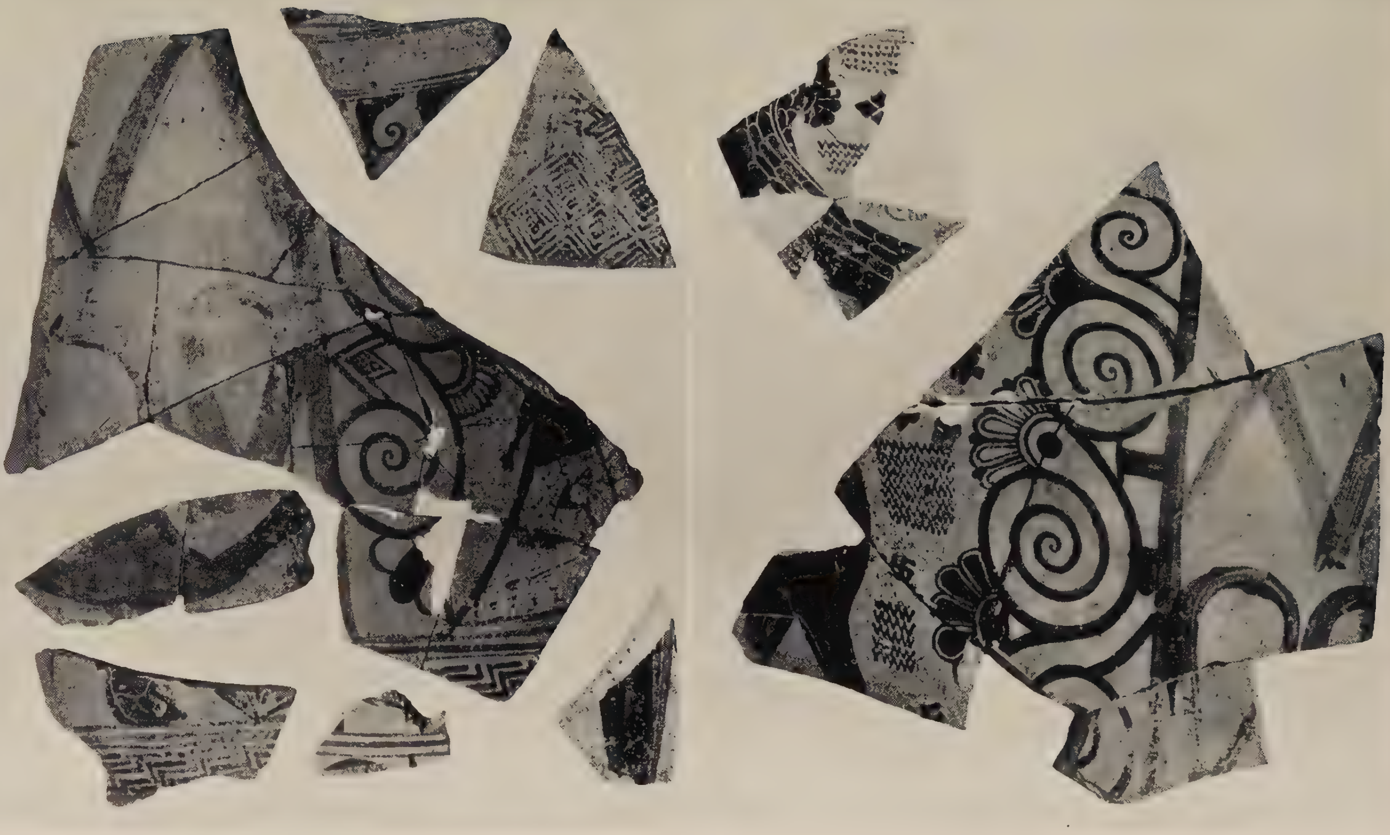


Protoattic Pottery: *a–d*, Fragments in Athens; *e*, Krater in Athens.
Scale: *a–d*, c. 3 : 5; *e*, c. 2 : 7.



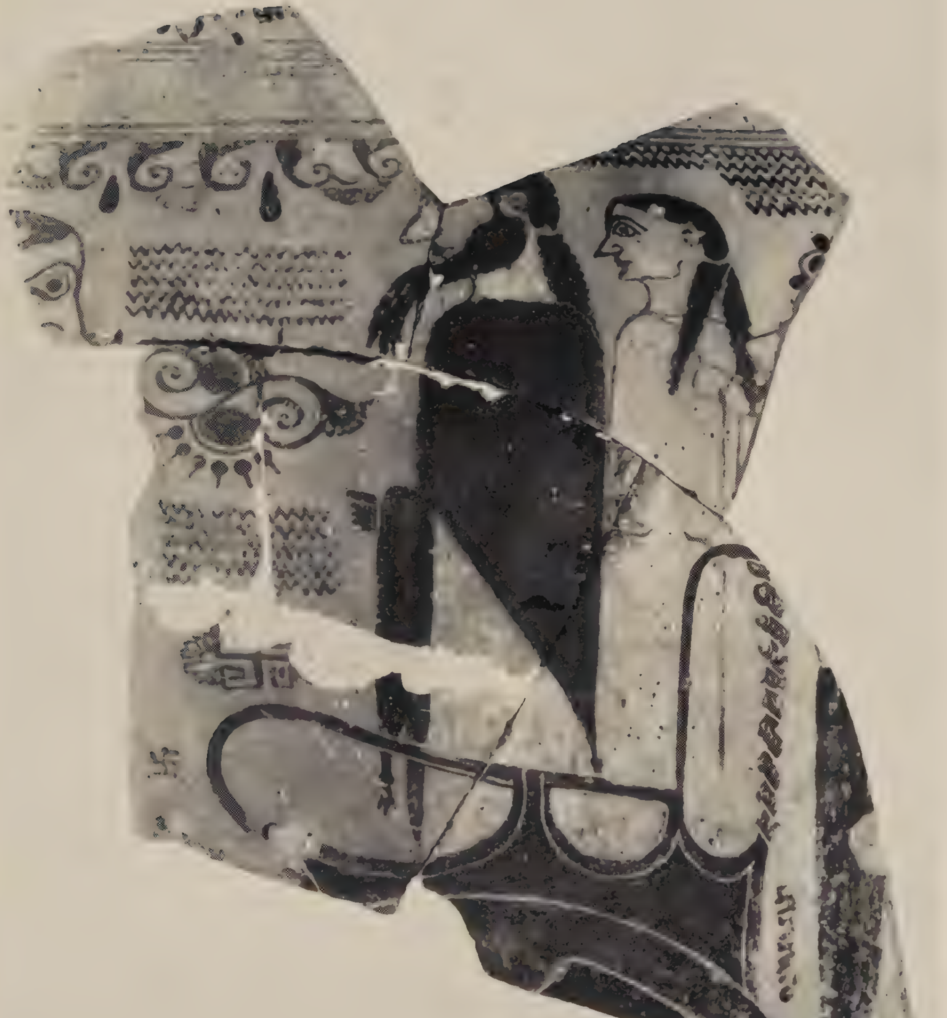
*a.* *b.*

Protoattic Pottery: Amphora in Athens: *a*, Shoulder; *b*, Neck (cf. Pls. 20, 21).
Scale: *a*, c. 2 : 5; *b*, c. 1 : 4.

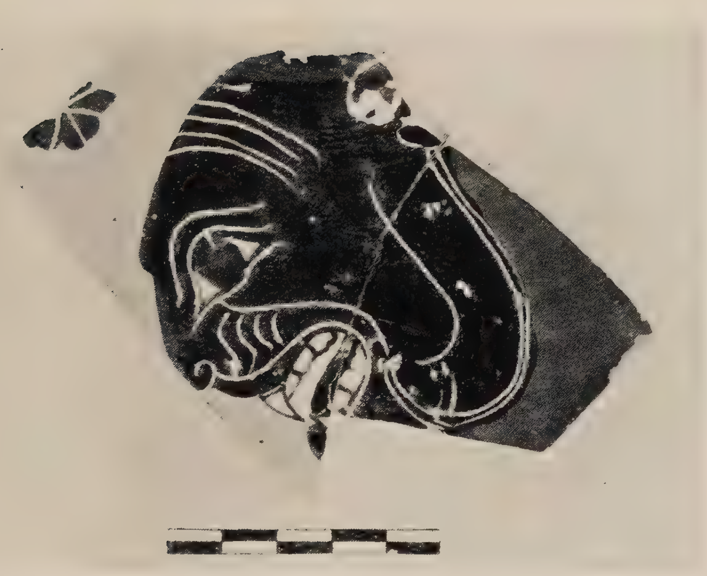


*a.* *b.*

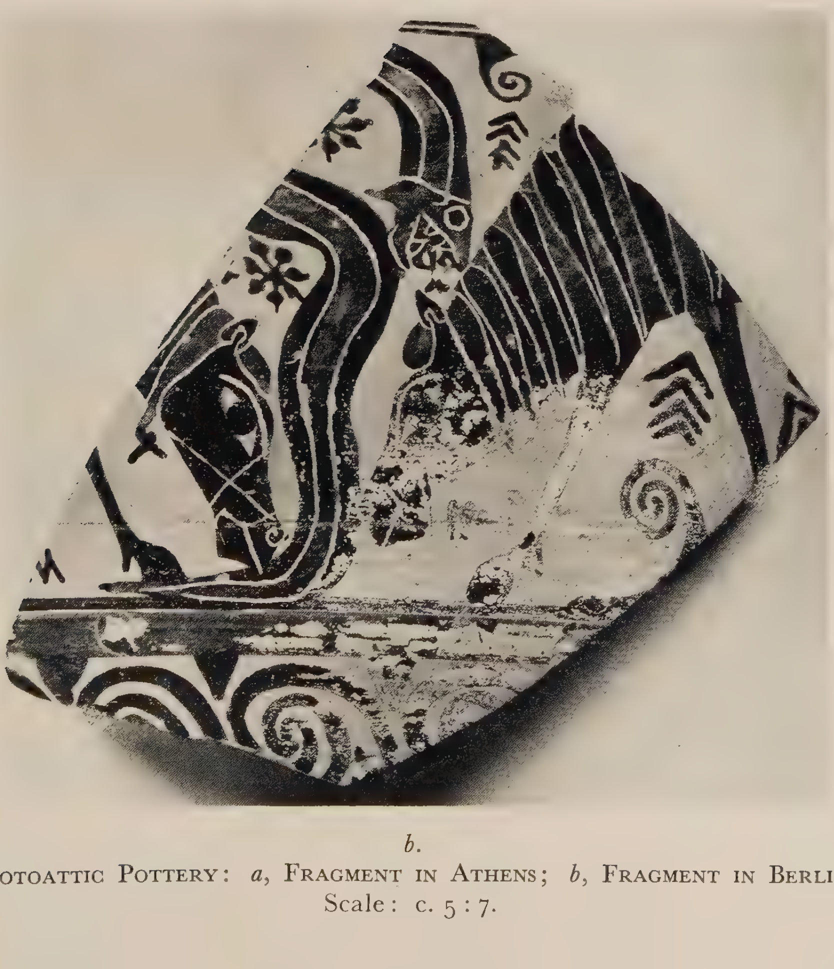
Protoattic Pottery: Amphora in Athens: *a* and *b* from Body (cf. Pls. 19, 21).
Scale: c. 1 : 4.



Protoattic Pottery: Amphora in Athens: from Body (cf. Pls. 19, 20).
Scale: slightly under 1 : 2.

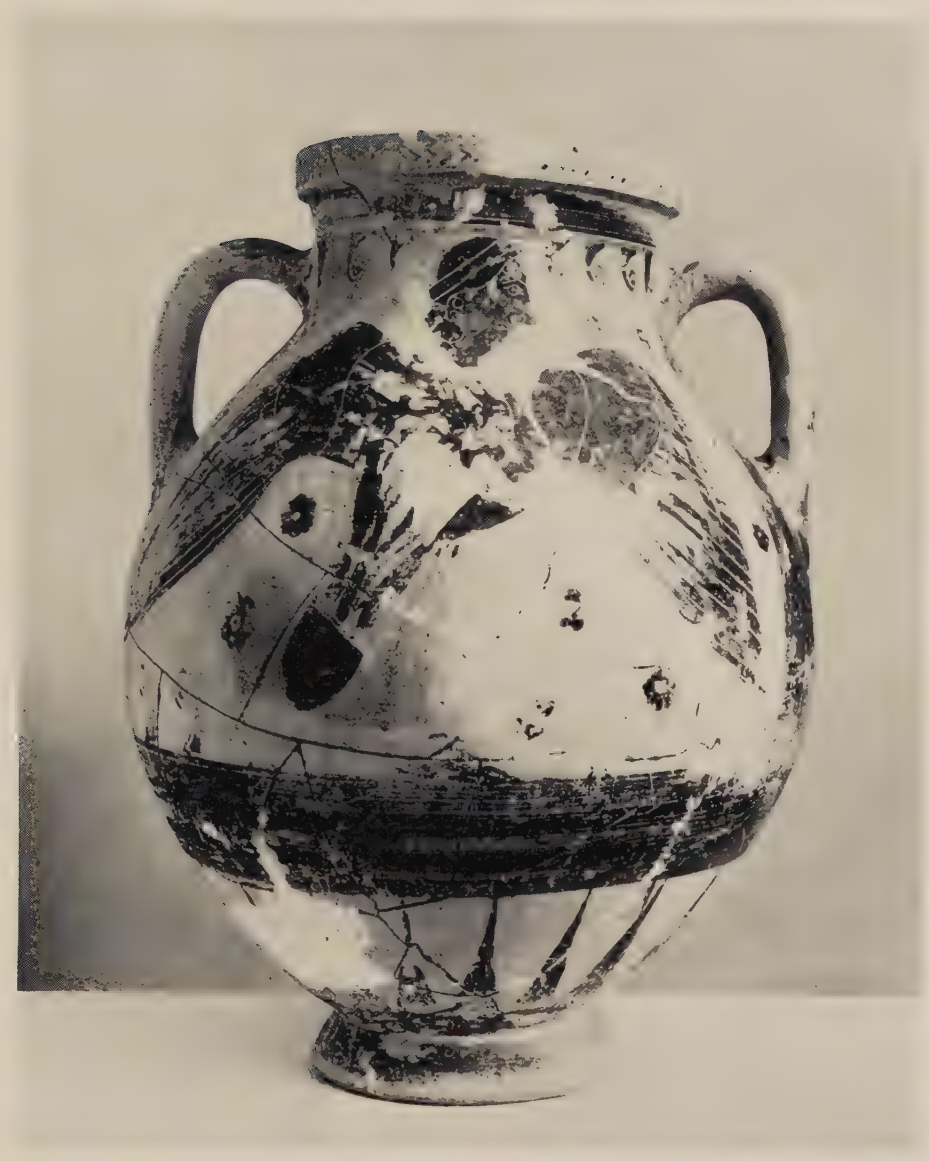


*a.*



*b.*

Protoattic Pottery: *a*, Fragment in Athens; *b*, Fragment in Berlin
Scale: c. 5 : 7.



Protoattic Pottery: Amphora in Athens.
Scale: c. 1 : 4.

BIBL.
LONDIN.
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